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# HOW TO USE THIS BOOK

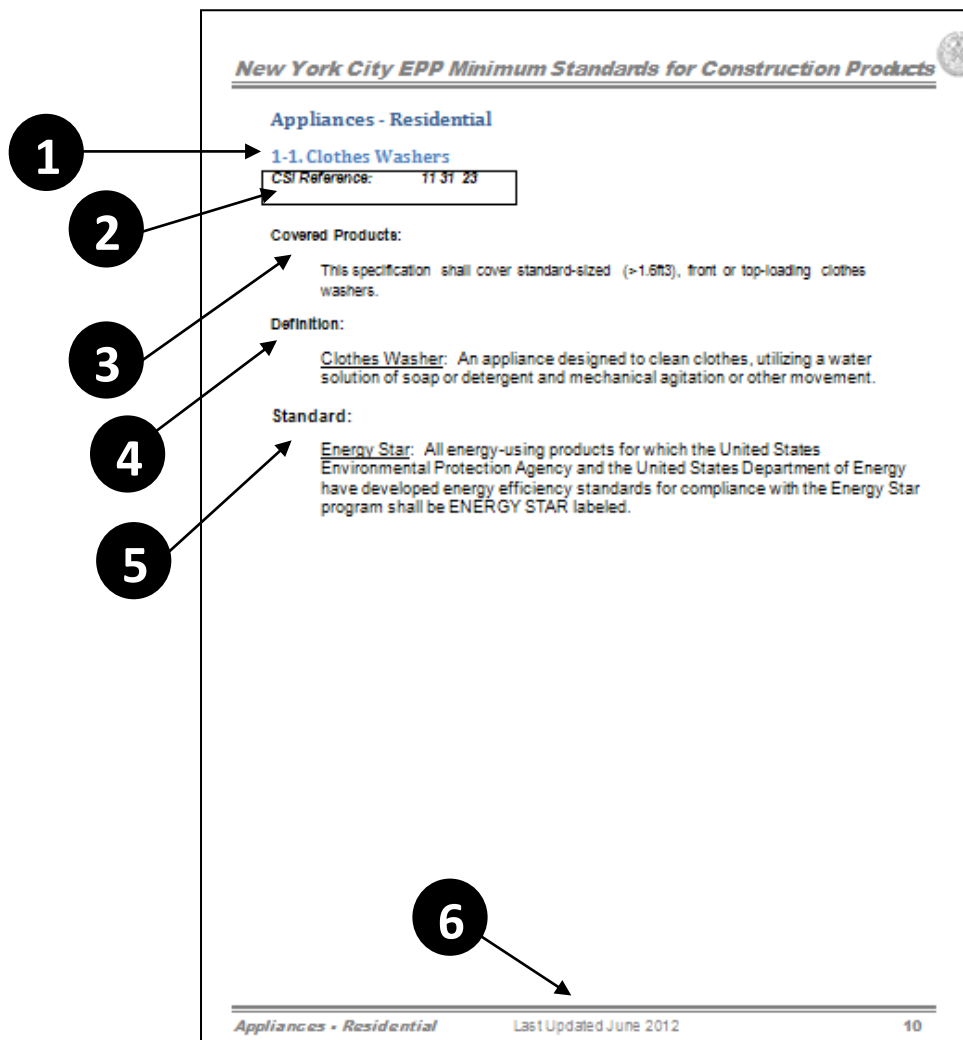
Local Laws 118, 119, 120, and 121 of 2005 require establishing standards for goods and materials purchased by the City according to a list of environmental priorities regarding energy and water efficiency, hazardous materials and recycled content. The laws apply to:

- Products purchased or leased directly by the City;
- Building construction and renovation of spaces over 15,000 square feet (or if in leased space, where an agency leases at least 50,000 square feet and the construction work is a capital project) that is not covered by the City's Green Buildings Law (LL 86 of 2005); and
- Any other contracts at the discretion of the Director of Citywide Environmental Purchasing.

To assist in compliance, the *New York City Environmentally Preferable Purchasing (EPP) Minimum Standards for Construction Products* contains a list of products that may be specified in construction contracts covered by the EPP laws and provides the applicable minimum standards referenced in the laws. If you are preparing specifications, you should review the index of the book and determine whether an EPP standard exists for any of the goods and materials you are specifying. If a standard does exist, you will need to have the specifications reflect the minimum standards. Please note: the EPP laws establish minimum requirements. You are encouraged to exceed these requirements, while being consistent with other applicable procurement laws.

This book will be updated. Please check the Mayor's Office of Contract Services (MOCS) website for revisions (<http://www.nyc.gov/html/moc/home.html>) and, if you have any questions, contact MOCS at (212) 788-0010.

## KEY TO USER'S GUIDE



1. **EPP Category Number and Product Name** — The first number represents the Chapter, the second number represents the product number
2. **CSI Reference** — Construction Specifications Institute (CSI) numbers, a generally accepted format for categorizing work results or construction practices that can be used as a reference in construction specifications
3. **Covered Products** — The scope of products that are covered by the City's EPP minimum standards
4. **Definitions** — All relevant words and terms used on this page are defined
5. **Standard** — The City's EPP minimum standard for the product listed
6. **Revision Date** — The effective date of the minimum standard



# **New York City EPP Minimum Standards for Construction Products**

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## **Appliances - Residential**

### **1-1. Clothes Washers**

<b>CSI Reference:</b>	<b>11 31 23</b>
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#### **Covered Products:**

This specification shall cover standard-sized (>1.6ft<sup>3</sup>), front or top-loading clothes washers.

#### **Definition:**

Clothes Washer: An appliance designed to clean clothes, utilizing a water solution of soap or detergent and mechanical agitation or other movement.

#### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **1-2. Dehumidifiers**

<b>CSI Reference:</b> 23 84 00
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### **Covered Products:**

This specification shall cover dehumidifiers with daily water removal capabilities up to 57 liters (120.5 US pints).

### **Definition:**

Dehumidifier: A self-contained, electrically operated, and mechanically refrigerated encased assembly consisting of (a) a refrigerated surface (evaporator) that condenses moisture from the atmosphere; (b) a refrigerating system, including an electric motor; (c) an air-circulating fan; and (d) means for collecting and/or disposing of the condensate.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **1-3. Dishwashers, Standard-Sized**

<b>CSI Reference:</b> 11 31 13
--------------------------------

### **Covered Products:**

This specification shall cover standard-sized dishwashers.

### **Definition:**

Dishwasher: A cabinet-like appliance which with the aid of water and detergent, washes, rinses, and dries (when a drying process is included) dishware, glassware, eating utensils, and most cooking utensils by chemical, mechanical and/or electrical means and discharges to the plumbing drainage system.

Standard-Sized: Having a capacity greater than or equal to eight place settings plus six serving pieces.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **1-4. Freezers, Upright, Chest and Compact**

<b>CSI Reference:</b> 11 31 13
--------------------------------

### **Covered Products:**

This specification shall cover freezers.

### **Definition:**

Freezer: A cabinet designed as a unit for the freezing and storage of food at temperatures of 0° Fahrenheit or below, and having a source of refrigeration requiring single phase, alternating current electric energy input only.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **1-5. Microwave Ovens**

<b>CSI Reference:</b> 11 44 00
--------------------------------

### **Covered Products:**

This specification shall cover all microwave ovens.

### **Definition:**

Microwave Oven: An appliance that electrically operated ovens using high-frequency electromagnetic waves that penetrate food, causing its molecules to vibrate and generate heat within the food to cook it very quickly.

Standby power: Refers to the electricity used by electrical products when they are switched off or not performing their primary purpose.

### **Standard:**

Microwave Oven:

Recommended Standby Levels: 2 watts or less

Best Available Standby Level: 2 watts or less



## **1-6. Refrigerators and Refrigerator-Freezers, Standard-Sized and Compact**

<b>CSI Reference:</b>	<b>11 31 13</b>
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### **Covered Products:**

This specification shall cover standard-sized and compact refrigerators and refrigerator-freezers.

### **Definition:**

Refrigerator (Electric Refrigerator): A cabinet designed for the refrigerated storage of food at temperatures above 32° Fahrenheit (F) and below 39°F, configured for general refrigerated food storage, and having a source of refrigeration requiring single phase, alternating current electric energy input only. An electric refrigerator may include a compartment for the freezing and storage of food at temperatures below 32°F, but does not provide a separate low temperature compartment designed for the freezing and storage of food at temperatures below 8°F.

Refrigerator-Freezer (Electric Refrigerator-Freezer): A cabinet which consists of two or more compartments with at least one of the compartments designed for the refrigerated storage of food at temperatures above 32°F and with at least one of the compartments designed for the freezing and storage of food at temperatures below 8°F which may be adjusted by the user to a temperature of 0°F or below. The source of refrigeration requires single phase, alternating current electric energy input only.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **Architectural Coatings**

### **2-1. Clear Wood Coating - Clear-Brushing Lacquers**

<b>CSI Reference:</b> <b>09 93 00</b>
---------------------------------------

#### **Covered Products:**

This category shall cover clear brushing lacquers to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

#### **Definition:**

Clear Wood Coating: Clear and semi-transparent coatings, including lacquers and varnishes applied to wood substrates to provide a transparent or translucent solid film.

Clear Brushing Lacquer: Any clear wood finish, excluding any clear lacquer sanding sealer, formulated with nitrocellulose or synthetic resins to dry by solvent evaporation without chemical reaction and to provide a solid, protective film, that is intended exclusively for application by brush and must comply with labeling requirements as defined in Title Six, Section 205.4 (e) of the New York Rules and Regulations.

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Sanding Sealer: A clear or semi-transparent wood coating labeled and formulated for application to bare wood to seal the wood and to provide a coat that can be abraded to create a smooth surface for subsequent applications of coatings. A sanding sealer that also meets the definition of a lacquer is not included in this category, but it is included in the lacquer category.

Lacquer: A clear or opaque wood coating, including clear lacquer sanding sealers, formulated with cellulosic or synthetic resins to dry by evaporation without chemical reaction and to provide a solid, protective film.





Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

**Standard:**

Clear Brushing Lacquers: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 275

The maximum content of VOCs shall be determined according to the American Society for Testing and Materials test method D 5116 (Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products).



## **2-2. Clear Wood Coating - Conversion Varnishes**

<b>CSI Reference:</b> <b>09 93 00</b>
---------------------------------------

### **Covered Products:**

This category shall cover conversion varnishes to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Clear Wood Coating: Clear and semi-transparent coatings, including lacquers and varnishes applied to wood substrates to provide a transparent or translucent solid film.

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Conversion Varnish: A clear acid curing coating with an alkyd or other resin blended with amino resins and supplied as a single component or two-component product. Conversion varnishes produce a hard, durable, clear finish designed for professional application to wood flooring. This film formation is the result of an acid-catalyzed condensation reaction, affecting a transesterification at the reactive ethers of the amino resins.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Conversion Varnishes: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 725

Any conversion varnish compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## 2-3. Clear Wood Coating - Lacquers (Including Lacquer Sanding Sealers)

**CSI Reference:** 09 93 00

### Covered Products:

This category shall cover lacquers (including sanding sealers) to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### Definition:

Clear Wood Coating: Clear and semi-transparent coatings, including lacquers and varnishes applied to wood substrates to provide a transparent or translucent solid film.

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Lacquer: A clear or opaque wood coating, including clear lacquer sanding sealers, formulated with cellulosic or synthetic resins to dry by evaporation without chemical reaction and to provide a solid, protective film.

Sanding Sealer: A clear or semi-transparent wood coating labeled and formulated for application to bare wood to seal the wood and to provide a coat that can be abraded to create a smooth surface for subsequent applications of coatings. A sanding sealer that also meets the definition of a lacquer is not included in this category, but it is included in the lacquer category.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### Standard:

Lacquers (Including Lacquer Sanding Sealers): Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 550

Any lacquer compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The



maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## 2-4. Clear Wood Coating - Sanding Sealers (Other Than Lacquers)

<b>CSI Reference:</b> 09 93 00
--------------------------------

### Covered Products:

This category shall cover sanding sealers (other than lacquers) to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### Definition:

Clear Wood Coating: Clear and semi-transparent coatings, including lacquers and varnishes applied to wood substrates to provide a transparent or translucent solid film.

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Lacquer: A clear or opaque wood coating, including clear lacquer sanding sealers, formulated with cellulosic or synthetic resins to dry by evaporation without chemical reaction and to provide a solid, protective film.

Sanding Sealer: A clear or semi-transparent wood coating labeled and formulated for application to bare wood to seal the wood and to provide a coat that can be abraded to create a smooth surface for subsequent applications of coatings. A sanding sealer that also meets the definition of a lacquer is not included in this category, but it is included in the lacquer category.

Varnish: Any clear or semi-transparent wood coating, excluding lacquers and shellacs, formulated to dry by chemical reaction on exposure to air. Varnishes may contain small amounts of pigment to color a surface, or to control the final sheen or gloss of the finish.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.



**Standard:**

Sanding Sealers: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 275

The maximum content of VOCs shall be determined according to the American Society for Testing and Materials test method D 5116 (Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products).



## **2-5. Clear Wood Coating - Varnishes**

<b>CSI Reference:</b> <b>09 93 00</b>
---------------------------------------

### **Covered Products:**

This category shall cover varnishes to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Clear Wood Coating: Clear and semi-transparent coatings, including lacquers and varnishes applied to wood substrates to provide a transparent or translucent solid film.

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Lacquer: A clear or opaque wood coating, including clear lacquer sanding sealers, formulated with cellulosic or synthetic resins to dry by evaporation without chemical reaction and to provide a solid, protective film.

Shellac: A clear or opaque coating formulated solely with the resinous secretions of the lac beetle (*Lacifer lacca*), thinned with alcohol and formulated to dry by evaporation without a chemical reaction.

Varnish: Any clear or semi-transparent wood coating, excluding lacquers and shellacs, formulated to dry by chemical reaction on exposure to air. Varnishes may contain small amounts of pigment to color a surface, or to control the final sheen or gloss of the finish.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Varnishes: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 275



The maximum content of VOCs shall be determined according to the American Society for Testing and Materials test method D 5116 (Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products).





## **2-6. Concrete Bond Breakers**

<b>CSI Reference:</b> <b>09 97 23</b>
---------------------------------------

### **Covered Products:**

This category shall cover varnishes to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Bond Breaker: A coating labeled and formulated for application between layers of concrete to prevent a freshly poured top layer of concrete from bonding to the layer over which it is poured.

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Bond Breakers: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 350

Any bond breaker compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-7. Concrete Curing Compounds**

<b>CSI Reference:</b> <b>03 39 00</b>
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### **Covered Products:**

This category shall cover concrete curing compounds to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Concrete Curing Compound: A coating labeled and formulated for application to freshly poured concrete to retard the evaporation of water.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Concrete Curing Compounds: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 350

Any concrete curing compound compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-8. Concrete Surface Retarders**

<b>CSI Reference:</b> <b>03 35 00</b>
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### **Covered Products:**

This category shall cover concrete surface retarders to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Concrete Surface Retarder: A mixture of retarding ingredients such as extender pigments, primary pigments, resin, and solvent that interact chemically with the cement to prevent hardening on the surface where the retarder is applied, allowing the retarded mix of cement and sand at the surface to be washed away to create an exposed aggregate finish.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Concrete Surface Retarders: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 780

Any concrete surface retarder compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-9. Dry Fog Coatings**

**CSI Reference:** 09 91 00

### **Covered Products:**

This category shall cover dry fog coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Dry Fog Coating: A coating labeled and formulated only for spray application such that overspray droplets dry before subsequent contact with incidental surfaces in the vicinity of the surface coating activity.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Dry Fog Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 400

Any dry fog coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-10. Faux Finishing Coatings**

**CSI Reference:** 09 94 16

### **Covered Products:**

This category shall cover faux finishing coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Faux Finishing Coating: A coating labeled and formulated as a stain or a glaze to create artistic effects including, but not limited to, dirt, old age, smoke damage, and simulated marble and wood grain.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Faux Finishing Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 350

Any faux finishing coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-11. Fire-Resistive Coatings**

<b>CSI Reference:</b> <b>07 80 00</b>
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### **Covered Products:**

This category shall cover fire-resistive coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Fire-Resistive Coating: An opaque coating labeled and formulated to protect the structural integrity by increasing the fire endurance of interior or exterior steel and other structural materials, that has been fire tested and rated by a testing agency and approved by building code officials for use in bringing assemblies of structural materials into compliance with Federal, State, and local building code requirements. The fire-resistive coating and the testing agency must be approved by building code officials. The fire-resistive coating shall be tested in accordance with American Society for Testing and Materials (ASTM) Designation E 119-00a.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Fire-Resistive Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 350

Any fire resistive coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-12. Fire-Retardant Coatings - Clear**

<b>CSI Reference:</b> <b>07 80 00</b>
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### **Covered Products:**

This category shall cover clear fire-retardant coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Fire-Retardant Coating: A coating labeled and formulated to retard ignition and flame spread, that has been tested and rated by a testing agency approved by building code officials for use in bringing building and construction materials into compliance with Federal, State, and local building code requirements. The fire-retardant coating and the testing agency must be approved by building code officials. The fire-retardant coating shall be tested in accordance with ASTM Designation E 84-01.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Fire-Retardant Coatings: Clear: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 650

Any fire retardant coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-13. Fire-Retardant Coatings - Opaque**

<b>CSI Reference:</b> <b>07 80 00</b>
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### **Covered Products:**

This category shall cover opaque fire-retardant coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Fire-Retardant Coating: A coating labeled and formulated to retard ignition and flame spread, that has been tested and rated by a testing agency approved by building code officials for use in bringing building and construction materials into compliance with Federal, State, and local building code requirements. The fire-retardant coating and the testing agency must be approved by building code officials. The fire-retardant coating shall be tested in accordance with ASTM Designation E 84-01.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Fire-Retardant Coatings – Opaque: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 350

Any opaque fire retardant coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.





## **2-14. Flat Paint**

<b>CSI Reference:</b> 09 91 00
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### **Covered Products:**

This category shall cover flat paint to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Flat Paint: Any coating that registers a gloss of less than 15 on an 85-degree meter or less than 5 on a 60-degree meter.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Flat Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 100

Any form release compound compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-15. Floor Coatings**

<b>CSI Reference:</b> 09 61 13
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### **Covered Products:**

This category shall cover floor coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Floor Coating: An opaque coating that is labeled and formulated for application to flooring, including, but not limited to, decks, porches, steps, and other horizontal surfaces which may be subjected to foot traffic.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Floor Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 100

The maximum content of VOCs shall be determined according to the American Society for Testing and Materials test method D 5116 (Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products).



## **2-16. Form Release Compounds**

<b>CSI Reference:</b> 03 10 00
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### **Covered Products:**

This category shall cover form release compounds to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Form-Release Compound: A coating labeled and formulated for application to a concrete form to prevent the freshly poured concrete from bonding to the form. The form may consist of wood, metal or some material other than concrete.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Form Release Compounds: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 250

Any form release compound compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## 2-17. Graphic Arts Coatings (Sign Paints)

<b>CSI Reference:</b> <b>10 14 00</b>
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### **Covered Products:**

This category shall cover graphic arts coatings (sign paints) to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Graphic Arts Coating or Sign Paint: A coating labeled and formulated for hand-application using brush or roller techniques to indoor and outdoor signs (excluding structural components) and murals including letter enamels, poster colors, copy blockers, and bulletin enamels.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Graphic Arts Coatings (Sign Paints): Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 500

Any graphic arts coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-18. High Temperature Coatings**

<b>CSI Reference:</b> <b>09 96 33</b>
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### **Covered Products:**

This category shall cover high temperature coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

High Temperature Coating: A high performance coating labeled and formulated for application to substrates exposed continuously or intermittently to temperatures above 204 Celsius (400 Fahrenheit).

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

High Temperature Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 420

Any high temperature coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## 2-19. Industrial Maintenance (IM) Coatings

<b>CSI Reference:</b> <b>09 96 00</b>
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### **Covered Products:**

This category shall cover industrial maintenance coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Industrial Maintenance Coating: A high performance architectural coating, including primers, sealers, undercoaters, intermediate coats, and topcoats, formulated for application to substrates exposed to one or more of the following extreme environmental conditions:

- (1) Immersion in water, wastewater, or chemical solutions (aqueous and non-aqueous solutions), or chronic exposures of interior surfaces to moisture condensation;
- (2) Acute or chronic exposure to corrosive, caustic or acidic agents, or to chemicals, chemical fumes, or chemical mixtures or solutions;
- (3) Repeated exposure to temperatures above 121°C (250°F);
- (4) Repeated (frequent) heavy abrasion, including mechanical wear and repeated (frequent) scrubbing with industrial solvents, cleansers, or scouring agents; or
- (5) Exterior exposure of metal structures and structural components.

In addition, any industrial maintenance coating shall display on the label or the lid of the container in which the coating is sold or distributed one or more of the descriptions listed below:

- (1) "For industrial use only."
- (2) "For professional use only."
- (3) "Not for residential use" or "Not intended for residential use."



Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

**Standard:**

Industrial Maintenance Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 340

Any industrial maintenance coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-20. Lacquers - Pigmented**

<b>CSI Reference:</b> 09 93 00
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### **Covered Products:**

This category shall cover industrial maintenance coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Pigmented Lacquer: An opaque wood coating, including clear lacquer sanding sealers, formulated with cellulosic or synthetic resins to dry by evaporation without chemical reaction and to provide a solid, protective film.

Sanding Sealer: A clear or semi-transparent wood coating labeled and formulated for application to bare wood to seal the wood and to provide a coat that can be abraded to create a smooth surface for subsequent applications of coatings. A sanding sealer that also meets the definition of a lacquer is not included in this category, but it is included in the lacquer category.

### **Standard:**

Pigmented Lacquers: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 275

The maximum content of VOCs shall be determined according to the American Society for Testing and Materials test method D 5116 (Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products).





## 2-21. Latex Paint – Consolidated

CSI Reference: 09 91 00

### Covered Products:

This specification shall cover consolidated latex paints used for covering graffiti, where color and consistency of performance are not primary concerns.

### Definition:

Consolidated paint: Post-consumer latex paint with similar characteristics (such as type, color family, and finish) that is consolidated at the point of collection. The post-consumer paints are blended together and repackaged, usually with few or no new ingredients added to improve the performance of the resulting paint.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### Standard:

Latex Paint – Consolidated:

Material: Recovered Material

Post-consumer Content (%): 100

Total Recovered Materials Content (%):100



## **2-22. Latex Paint – Reprocessed White, Off-White and Pastel Colors**

<b>CSI Reference:</b>	<b>09 91 00</b>
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### **Covered Products:**

This specification shall cover reprocessed white, off-white and pastel colored latex paints used for interior and exterior architectural applications such as wallboard, ceilings, and trim; gutterboards; and concrete, stucco, masonry, wood, and metal surfaces.

### **Definition:**

Reprocessed paint: Post-consumer latex paint that has been sorted by a variety of characteristics that are dictated by the recycler. In general, the paint is sorted by type (i.e., interior versus exterior), by light and dark colors, and by finish (i.e., high-gloss versus flat). The reprocessor adds raw materials to meet the performance and color requirements expected or required by the end user.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

Latex Paint – Reprocessed White, Off-White and Pastel Colors:

Material: Recovered Material

Recovered Post-consumer Content (%): 20

Total Recovered Materials Content (%): 20



## 2-23. Latex Paint – Reprocessed Grey, Brown, Earthtones and Other Dark Colors

<b>CSI Reference:</b>	<b>09 91 00</b>
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### **Covered Products:**

This specification shall cover reprocessed grey, brown, earthtone and other dark colored latex paints used for interior and exterior architectural applications such as wallboard, ceilings, and trim; gutterboards; and concrete, stucco, masonry, wood, and metal surfaces.

### **Definition:**

Reprocessed paint: Post-consumer latex paint that has been sorted by a variety of characteristics that are dictated by the recycler. In general, the paint is sorted by type (i.e., interior versus exterior), by light and dark colors, and by finish (i.e., high-gloss versus flat). The reprocessor adds raw materials to meet the performance and color requirements expected or required by the end user.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

Latex Paint – Reprocessed Grey, Brown, Earthtones and Other Dark Colors:

Material: Recovered Material

Recovered Post-consumer Content (%): 50-99

Total Recovered Materials Content (%): 50-99



## **2-24. Low Solids Coatings**

**CSI Reference:** 09 93 00

### **Covered Products:**

This category shall cover low solids coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Low Solids Coating: A coating containing 0.12 kilogram or less of solids per liter (one pound or less of solids per gallon) of coating material.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Low Solids Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 120

Any low solids coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-25. Magnesite Cement Coatings**

**CSI Reference:** 09 97 23

### **Covered Products:**

This category shall cover magnesite cement coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Magnesite Cement Coating: A coating labeled and formulated for application to magnesite cement decking to protect the magnesite cement substrate from erosion by water.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Magnesite Cement Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 450

Any magnesite cement coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-26. Mastic Texture Coatings**

<b>CSI Reference:</b>	<b>09 93 00</b>
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### **Covered Products:**

This category shall cover mastic texture coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Mastic Texture Coating: A coating labeled and formulated to cover holes and minor cracks and conceal surface irregularities, which is applied in a single coat of at least 10 mils (0.010 inch) dry film thickness.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Mastic Texture Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 300

Any mastic texture coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## 2-27. Metallic Pigmented Coatings

<b>CSI Reference:</b> <b>09 97 00</b>
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### **Covered Products:**

This category shall cover metallic pigmented coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Metallic Pigmented Coating: A coating containing at least 48 grams of elemental metallic pigment per liter of coating as applied (0.4 pounds per gallon), when tested in accordance with South Coast Air Quality Management District Method 318-95.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Metallic Pigmented Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 500

Any metallic pigmented coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-28. Multi-Color Coatings**

<b>CSI Reference:</b> 09 91 00
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### **Covered Products:**

This category shall cover multi-color coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Multi-Color Coating: A coating that is packaged in a single container and exhibits more than one color when applied in a single coat.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Multi-Color Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 500

Any multi-color coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.





## **2-29. Nonflat High-Gloss Coatings**

**CSI Reference:** 09 91 00

### **Covered Products:**

This category shall cover nonflat high-gloss coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Nonflat High-Gloss Coating: A non-flat coating that registers a gloss of 70 or above on a 60-degree meter according to ASTM Designation D 523-89 (1999) and must comply with labeling requirements as defined in part 205.4 (i) of Title Six of the New York Codes, Rules and Regulations.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Nonflat High-Gloss Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 250

Any nonflat high-gloss coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-30. Nonflat Paint**

<b>CSI Reference:</b> 09 91 00
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### **Covered Products:**

This category shall cover nonflat paint to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Nonflat Paint: Any coating that a gloss of 5 or greater on a 60 degree meter and a gloss of 15 or greater on an 85 degree meter.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Nonflat Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 150

Any nonflat coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-31. Pre-Treatment Wash Primers**

<b>CSI Reference:</b> 09 91 00
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### **Covered Products:**

This category shall cover pre-treatment wash primers to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Primer: A coating labeled and formulated for application to a substrate to provide a firm bond between the substrate and subsequent coats.

Pre-Treatment Wash Primer: A primer that contains a minimum of 0.5 acid, by weight, when tested in accordance with ASTM Designation D 1613-96 (1999), that is labeled and formulated for application directly to bare metal surfaces to provide corrosion resistance and to promote adhesion of subsequent topcoats.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Pre-Treatment Wash Primers: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 420

Any pre-treatment wash primer compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-32. Primers for Flat Paint**

<b>CSI Reference:</b> <b>09 90 00</b>
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### **Covered Products:**

This category shall cover primers for flat paint to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Flat Paint: Any coating that registers a gloss of less than 15 on an 85-degree meter or less than 5 on a 60-degree meter.

Primer: A coating labeled and formulated for application to a substrate to provide a firm bond between the substrate and subsequent coats.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Primer for Flat Paint: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 100

The maximum content of VOCs shall be determined according to the American Society for Testing and Materials test method D 5116 (Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products).



## **2-33. Primers for Non-Flat Paint**

<b>CSI Reference:</b> 09 90 00
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### **Covered Products:**

This category shall cover primers for non-flat paint to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Nonflat Paint: Any coating that a gloss of 5 or greater on a 60 degree meter and a gloss of 15 or greater on an 85 degree meter.

Primer: A coating labeled and formulated for application to a substrate to provide a firm bond between the substrate and subsequent coats.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Primer for Non-Flat Paint: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 150

The maximum content of VOCs shall be determined according to the American Society for Testing and Materials test method D 5116 (Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products).



## **2-34. Primers, Sealers, and Undercoaters**

<b>CSI Reference:</b> <b>09 90 00</b>
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### **Covered Products:**

This category shall cover primers, sealers and undercoaters to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Flat Paint: Any coating that registers a gloss of less than 15 on an 85-degree meter or less than 5 on a 60-degree meter.

Nonflat Paint: Any coating that registers a gloss of 5 or greater on a 60 degree meter and a gloss of 15 or greater on an 85 degree meter.

Primer: A coating labeled and formulated for application to a substrate to provide a firm bond between the substrate and subsequent coats.

Rust Preventative / Anti-Corrosive Paint: Any coating formulated exclusively for non industrial use to prevent the corrosion of metal surfaces.

Sealer: A coating labeled and formulated for application to a substrate for one or more of the following purposes: to prevent subsequent coatings from being absorbed by the substrate, or to prevent harm to subsequent coatings by materials in the substrate.

Undercoater: A coating labeled and formulated to provide a smooth surface for subsequent coatings.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.



## **Standard:**

Primers, Sealers and Undercoaters: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 200

Any primer, sealer and undercoater compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-35. Quick-Dry Enamels**

<b>CSI Reference:</b> <b>09 90 00</b>
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### **Covered Products:**

This category shall cover quick-dry enamels to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Quick-Dry Enamel: A non-flat coating that is formulated to have the following characteristics:

- (1) is capable of being applied directly from the container under normal conditions with ambient temperatures between 16°C and 27°Celsius (60° and 80° Fahrenheit);
- (2) when tested in accordance with ASTM Designation D 1640-95 (1999) (see Table 1, section 200.9 of this Title), sets to touch in two hours or less, is tack free in four hours or less, and dries hard in eight hours or less by the mechanical test method; and
- (3) has a dried film gloss of 70 or above on a 60-degree meter.

The labels of all quick-dry enamels prominently display the words "Quick dry" and the dry hard time.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.





## **Standard:**

Quick-Dry Enamels: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 250

Any quick-dry enamel compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-36. Quick-Dry Primers, Sealers, and Undercoaters**

<b>CSI Reference:</b> <b>09 90 00</b>
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### **Covered Products:**

This category shall cover quick-dry primers, sealers and undercoaters to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Primer: A coating labeled and formulated for application to a substrate to provide a firm bond between the substrate and subsequent coats.

Quick-Dry Primer, Sealer and Undercoater: A primer sealer or undercoater that is dry to the touch in 30 minutes and can be relocated in two hours when tested in accordance with ASTM Designation D 1640-95 (1999)

Sealer: A coating labeled and formulated for application to a substrate for one or more of the following purposes: to prevent subsequent coatings from being absorbed by the substrate, or to prevent harm to subsequent coatings by materials in the substrate.

Undercoater: A coating labeled and formulated to provide a smooth surface for subsequent coatings.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Quick-Dry Primers, Sealers and Undercoaters: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 200

Any quick-dry primer, sealer and undercoater compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required



under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## 2-37. Recycled Coatings

<b>CSI Reference:</b> 09 90 00
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### Covered Products:

This category shall cover recycled coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### Definition:

Architectural Coating: Any coating to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This term shall not include the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Recycled Coating: An architectural coating formulated such that not less than 50 percent of the weight consists of secondary and post-consumer coating, with not less than 10 percent of the total weight consisting of post-consumer coating.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### Standard:

Recycled Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 250

Any recycled coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## 2-38. Roof Coatings

**CSI Reference:** 07 50 00

### Covered Products:

This category shall cover roof coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### Definition:

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Metallic Pigmented Coating: A coating containing at least 48 grams of elemental metallic pigment per liter of coating as applied (0.4 pounds per gallon), when tested in accordance with South Coast Air Quality Management District Method 318-95.

Roof Coating: A material typically applied in the liquid state to the roof surface at the time of construction or at a later time as a retrofit measure. Roof coatings may be bituminous, polymeric, or polymer modified. Bituminous roof coatings are formulated using bitumen. Polymeric roof coatings are formulated using a variety of synthetic resins such as acrylic, neoprene, styrene butadiene, urethane, polyvinyl acetate, and others. Polymer modified roof coatings are manufactured by combining a portion of the polymeric technology with bitumen technology.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### Standard:

Roof Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 250

Any roof coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-39. Roof Coatings (Bituminous)**

<b>CSI Reference:</b> 07 50 00
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### **Covered Products:**

This category shall cover bituminous roof coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Bitumen: Black or brown materials including, but not limited to, asphalt, tar, pitch, and asphaltite that are soluble in carbon disulfide, consist mainly of hydrocarbons, and are obtained from natural deposits or as residues from the distillation of crude petroleum or coal.

Bituminous Roof Coating: A coating which incorporates bitumens that is labeled and formulated exclusively for roofing.

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Bituminous Roof Coatings: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 300

Any bituminous roof coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-40. Roof Primers (Bituminous)**

<b>CSI Reference:</b> <b>07 50 00</b>
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### **Covered Products:**

This category shall cover bituminous roof primers to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Bitumen: Black or brown materials including, but not limited to, asphalt, tar, pitch, and asphaltite that are soluble in carbon disulfide, consist mainly of hydrocarbons, and are obtained from natural deposits or as residues from the distillation of crude petroleum or coal.

Bituminous Roof Coating: A coating which incorporates bitumens that is labeled and formulated exclusively for roofing.

Primer: A coating labeled and formulated for application to a substrate to provide a firm bond between the substrate and subsequent coats.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Bituminous Roof Primers: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 350

Any bituminous roof primer compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-41. Rust Preventative / Anti-Corrosive Paint**

<b>CSI Reference:</b> <b>40 46 16</b>
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### **Covered Products:**

This category shall cover rust-preventative / anti-corrosive paint to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Rust Preventative / Anti-Corrosive Paint: Any coating formulated exclusively for non industrial use to prevent the corrosion of metal surfaces.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Rust-Preventative / Anti-Corrosive Paint: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 250

The maximum content of VOCs shall be determined according to the American Society for Testing and Materials test method D 5116 (Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products).





## **2-42. Shellacs - Clear**

**CSI Reference:** 09 93 00

### **Covered Products:**

This category shall cover clear shellacs to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Shellac: A clear or opaque coating formulated solely with the resinous secretions of the lac beetle (*Lacifer lacca*), thinned with alcohol and formulated to dry by evaporation without a chemical reaction.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Shellacs – Clear: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 730

Any clear shellac compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-43. Shellacs - Opaque**

**CSI Reference:** 09 93 00

### **Covered Products:**

This category shall cover opaque shellacs to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Shellac: A clear or opaque coating formulated solely with the resinous secretions of the lac beetle (*Lacifer lacca*), thinned with alcohol and formulated to dry by evaporation without a chemical reaction.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Shellacs – Opaque: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 550

Any opaque shellac compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## 2-44. Specialty Primers, Sealers and Undercoaters

<b>CSI Reference:</b> <b>09 90 00</b>
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### **Covered Products:**

This category shall cover specialty primers, sealers and undercoaters to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Primer: A coating labeled and formulated for application to a substrate to provide a firm bond between the substrate and subsequent coats.

Sealer: A coating labeled and formulated for application to a substrate for one or more of the following purposes: to prevent subsequent coatings from being absorbed by the substrate, or to prevent harm to subsequent coatings by materials in the substrate.

Specialty Primer, Sealer and Undercoater: A coating that is formulated for application to a substrate to seal fire, smoke or water damage, to condition excessively chalky surfaces, or to block stains. An excessively chalky surface is one that is defined as having a chalk rating of four or less as determined by ASTM Designation D 4214-98. Specialty Primers, Sealers and Undercoaters in this specification must comply with labeling requirements as defined in part 205.4 (f) of Title Six of the New York Codes, Rules and Regulations.

Undercoater: A coating labeled and formulated to provide a smooth surface for subsequent coatings.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.



**Standard:**

Specialty Primers, Sealers and Undercoaters: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 350

Any specialty primer, sealer and undercoater compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-45. Stains**

<b>CSI Reference:</b> 09 93 00
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### **Covered Products:**

This category shall cover stains to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Stain: A clear semi-transparent or opaque coating labeled and formulated to change the color of a surface but not conceal the grain pattern or texture.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Stains: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 250

Any stain compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## 2-46. Swimming Pool Coatings and Swimming Pool Repair and Maintenance Coatings

<b>CSI Reference:</b>	<b>13 11 00</b>
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### **Covered Products:**

This category shall cover swimming pool coatings and swimming pool repair and maintenance coatings to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Swimming Pool Coating: A coating labeled and formulated to coat the interior of swimming pools and to resist swimming pool chemicals.

Swimming Pool Repair and Maintenance Coating: A rubber based coating labeled and formulated to be used over existing rubber based coatings for the repair and maintenance of swimming pools.

### **Standard:**

Swimming Pool Coatings and Swimming Pool Repair and Maintenance Coatings:  
Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 340

Any swimming pool coating and swimming pool repair and maintenance coating compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-47. Thermoplastic Rubber Coatings and Mastics**

<b>CSI Reference:</b> <b>07 54 00</b>
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### **Covered Products:**

This category shall cover thermoplastic rubber coatings and mastics to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Thermoplastic Rubber Coating and Mastic: A coating or mastic formulated and recommended for application to roofing or other structural surfaces and that incorporates no less than 40 percent by weight of thermoplastic rubbers in the total resin solids and may also contain other ingredients including, but not limited to, fillers, pigments, and modifying resins.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Thermoplastic Rubber Coatings and Mastics: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 550

Any thermoplastic rubber coating and mastic compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-48. Waterproofing Concrete / Masonry Sealers**

<b>CSI Reference:</b> <b>09 97 23</b>
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### **Covered Products:**

This category shall cover waterproofing concrete/masonry sealers to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

Pigmented Lacquer: An opaque wood coating, including clear lacquer sanding sealers, formulated with cellulosic or synthetic resins to dry by evaporation without chemical reaction and to provide a solid, protective film.

### **Standard:**

Waterproofing Concrete/Masonry Sealers: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 400

Any waterproofing concrete/masonry sealer compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.





## **2-49. Waterproofing Sealers**

<b>CSI Reference:</b> 07 10 00
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### **Covered Products:**

This category shall cover waterproofing sealers to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

Waterproofing Sealer: A coating labeled and formulated for application to a porous substrate for the primary purpose of preventing the penetration of water.

### **Standard:**

Waterproofing Sealers: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 250

Any waterproofing sealer compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **2-50. Wood Preservatives**

<b>CSI Reference:</b> 06 05 73
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### **Covered Products:**

This category shall cover wood preservatives to be applied to stationary structures and their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. This category shall not apply to the following: marine-based paints and coatings; coatings or materials to be applied to metal structures, such as bridges; or coatings or materials labeled and formulated for application in roadway maintenance activities.

### **Definition:**

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

Wood Preservative: A coating labeled and formulated to protect exposed wood from decay or insect attack, that is registered under the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. section 136, et. seq) and with Part 326 of the New York State Rules and Regulations.

### **Standard:**

Wood Preservatives: Maximum Concentration of Volatile Organic Compounds in Grams per Liter: 350

Any wood preservative compliant with Part 205 of Title Six of the New York Codes, Rules and Regulations meets the standard required under this specification. The maximum content of VOCs shall be determined according to the test method required under part 205.6 of such part.



## **HVAC Equipment - Commercial**

### **3-1. Air Conditioners, Air-Cooled**

<b>CSI Reference:</b> <b>23 70 00</b>
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#### **Covered Products:**

This specification shall cover air-cooled, light commercial central air conditioners that are either: (1) rated at 65,000 to 250,000 Btu/h; or (2) rated below 65,000 Btu/h and powered by three-phase current. This specification shall cover both single package and split system units.

#### **Definition:**

Central Air Conditioner: A central air-conditioner model consists of one or more factory-made assemblies that normally include an evaporator or cooling coil(s), compressor(s), and condenser(s). Central air conditioners provide the function of air-cooling, and may include the functions of air circulation, air cleaning, dehumidifying, or humidifying.

Single Package: A single package unit is a central air conditioner that combines both condenser and air handling capabilities in a single casing.

Split System: A split system is a central air conditioner with separate indoor (evaporator) and outdoor (condenser) units.

#### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **3-2. Air Conditioners, Gas/Electric Package Units**

<b>CSI Reference:</b> 23 70 00
--------------------------------

### **Covered Products:**

This specification shall cover light commercial gas/electric package units that are either:  
(1) rated at 65,000 to 250,000 Btu/h; or (2) rated below 65,000 Btu/h and powered by three-phase current.

### **Definition:**

Gas/Electric Package Unit: A single package unit with gas heating and electric air conditioning that is often installed on a slab or roof.

Single Package: A single package unit is a central air conditioner that combines both condenser and air handling capabilities in a single casing.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **3-3. Chillers, Air-Cooled**

<b>CSI Reference:</b> <b>23 64 00</b>
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### **Covered Products:**

This specification shall cover part load optimized and full load optimized air-cooled chillers of the following types and cooling capacities: scroll, 30-60 tons; reciprocating, 30-180 tons; and screw 70-200 tons.

### **Definition:**

Integrated Part-Load Value (IPLV): A weighted average of efficiency measurements at various part-load conditions, as described in ARI Standard 550/590-98.

### **Standard:**

#### Chillers, Air-Cooled:

Compressor Type and Capacity: Scroll (30 - 60 tons)

Part Load Optimized Chillers IPLV (kW/ton) Required: 0.86 or less

Full Load Optimized Chillers IPLV (kW/ton) Required: 1.23 or less 1.1

Compressor Type and Capacity: Reciprocating (30 - 150 tons)

Part Load Optimized Chillers IPLV (kW/ton) Required: 0.90 or less

Full Load Optimized Chillers IPLV (kW/ton) Required: 1.23 or less 1

Compressor Type and Capacity: Screw (70 - 200 tons)

Part Load Optimized Chillers IPLV (kW/ton) Required: 0.98 or less

Full Load Optimized Chillers IPLV (kW/ton) Required: 1.23 or less 0.94



## **3-4. Chillers, Water-Cooled**

<b>CSI Reference:</b> <b>23 64 00</b>
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### **Covered Products:**

This specification shall cover part load optimized and full load optimized water-cooled chillers of the following types and cooling capacities: centrifugal, 150-2,000 tons; and rotary screw, greater than 150 tons.

### **Definition:**

Integrated Part-Load Value (IPLV): A weighted average of efficiency measurements at various part-load conditions, as described in ARI Standard 550/590-98.

### **Standard:**

#### Chillers, Water-Cooled:

Compressor Type and Capacity: Centrifugal (150 - 299 tons)  
Part Load Optimized Chillers IPLV (kW/ton) Required: 0.52 or less  
Full Load Optimized Chillers IPLV (kW/ton) Required: 0.59 or less

Compressor Type and Capacity: Centrifugal (300 - 2,000 tons)  
Part Load Optimized Chillers IPLV (kW/ton) Required: 0.45 or less  
Full Load Optimized Chillers IPLV (kW/ton) Required: 0.56 or less

Compressor Type and Capacity: Rotary Screw (>150 tons)  
Part Load Optimized Chillers IPLV (kW/ton) Required: 0.49 or less  
Full Load Optimized Chillers IPLV (kW/ton) Required: 0.64 or less



## **3-5. Heat Pumps, Air Source**

<b>CSI Reference:</b> 23 81 00
--------------------------------

### **Covered Products:**

This specification shall cover air-source, light commercial heat pumps that are either: (1) rated at 65,000 to 250,000 Btu/h; or (2) rated below 65,000 Btu/h and powered by three-phase current. This specification shall cover both single package and split system units.

### **Definition:**

Heat Pump: A heat pump model consists of one or more factory-made assemblies that normally include an indoor conditioning coil(s), compressor(s), and outdoor coil(s), including means to provide a heating function. Heat pumps shall provide the function of air heating with controlled temperature, and may include the functions of air-cooling, air circulation, air cleaning, dehumidifying, or humidifying.

Single Package: A single package unit is a central air conditioner that combines both condenser and air handling capabilities in a single casing.

Split System: A split system is a central air conditioner with separate indoor (evaporator) and outdoor (condenser) units.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## HVAC Equipment - Residential

### 4-1. Air Conditioners, Central (<65,000 Btu/h)

<b>CSI Reference:</b> <b>23 70 00</b>
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#### Covered Products:

This specification shall cover residential central air conditioners that are rated below 65,000 Btu/h, and powered by single-phase current. The central air conditioner may be a single packaged system, where there is only one assembly, or a split system where there are two.

#### Definition:

Central Air Conditioner: A central air-conditioner model consists of one or more factory-made assemblies that normally include an evaporator or cooling coil(s), compressor(s), and condenser(s). Central air conditioners provide the function of air-cooling, and may include the functions of air circulation, air cleaning, dehumidifying, or humidifying.

Single Package: A single package unit is a central air conditioner that combines both condenser and air handling capabilities in a single casing.

Split System: A split system is a central air conditioner with separate indoor (evaporator) and outdoor (condenser) units.

#### Standard:

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.





## **4-2. Air Conditioners, Central, Gas/Electric Package Units (<65,000 Btu/h)**

<b>CSI Reference:</b> <b>23 70 00</b>
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### **Covered Products:**

This specification shall cover gas/electric package units that are rated below 65,000 Btu/h.

### **Definition:**

Air-Source Heat Pump (ASHP): An air-source unitary heat pump model consists of one or more factory-made assemblies which normally include an indoor conditioning coil(s), compressor(s), and outdoor coil(s), including means to provide a heating function. ASHPs shall provide the function of air heating with controlled temperature, and may include the functions of air-cooling, air-circulation, air-cleaning, dehumidifying or humidifying.

Central Air Conditioner: A central air-conditioner model consists of one or more factory-made assemblies that normally include an evaporator or cooling coil(s), compressor(s), and condenser(s). Central air conditioners provide the function of air-cooling, and may include the functions of air circulation, air cleaning, dehumidifying, or humidifying.

Gas/Electric Package Unit: A single package unit with gas heating and electric air conditioning that is often installed on a slab or roof.

Single Package: A single package unit is a central air conditioner that combines both condenser and air handling capabilities in a single casing.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **4-3. Air Source Heat Pumps (<65,000 Btu/h)**

<b>CSI Reference:</b> 23 50 00
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### **Covered Products:**

This specification shall cover air source heat pumps (ASPHs) that are rated below 65,000 Btu/h. The ASPH may be a single packaged system, where there is only one assembly, or a split system where there are two.

### **Definition:**

Air-Source Heat Pump (ASHP): An air-source unitary heat pump model consists of one or more factory-made assemblies which normally include an indoor conditioning coil(s), compressor(s), and outdoor coil(s), including means to provide a heating function. ASHPs shall provide the function of air heating with controlled temperature, and may include the functions of air-cooling, air-circulation, air-cleaning, dehumidifying or humidifying.

Single Package: A single package unit is a central air conditioner that combines both condenser and air handling capabilities in a single casing.

Split System: A split system is a central air conditioner with separate indoor (evaporator) and outdoor (condenser) units.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **4-4. Boilers and Boiler/Hot Water Heaters (<300,000 Btu/h)**

<b>CSI Reference:</b> <b>23 52 00</b>
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### **Covered Products:**

This specification shall cover residential boilers and residential combination space-heating and water heating appliances.

### **Definition:**

Boiler: A self-contained fuel burning appliance of less than 300,000 Btu per hour energy input, for supplying low pressure steam or hot water for space heating applications.

British Thermal Unit (Btu): A British standard unit of energy.

Combination Space-Heating and Water Heating Appliance: Appliance that provides both space conditioning (boiler) and hot water heating with one appliance or energy source. The combination appliance circulates hot water from the water heater through a heat exchanger in the air handler. A blower will move the heated air through a standard duct system. In the summer, an air conditioner is connected to the exchanger and the system functions similarly, with cool air being pushed through the ductwork.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## 4-5. Ceiling Fans

<b>CSI Reference:</b>	<b>11 30 00</b>
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### Covered Products:

This specification shall cover residential ceiling fans but shall not cover hugger fans.

### Definition:

Hugger Fan: A fan style where the motor mounts directly to the ceiling. Hugger fans are most commonly used in rooms with low ceilings. Hugger fans are manufactured and marketed as such and should not be confused with multi-mount (traditional) fans that can be hung without the down rod, giving the same effect as a hugger fan. Hugger fans are designed to allow installations on 7'6" – 8' height ceilings when using a fan light kit in a location where walking under the fan will occur.

Light Kit: A complete lighting unit consisting of a lamp or lamps, and ballasting (when applicable) together with the parts designed to distribute the light, position and protect the lamps, and connect the lamps to the power supply. Light kits can be:

- **Integral** – the light kit is attached to the ceiling fan housing at the time of purchase. This type of a light kit is integrated into the bottom cap of the fan and cannot be removed or replaced with another light kit.
- **Attachable** – the light kit is not, at the time of sale, physically attached to the fan. The light kit must be attached to the ceiling fan for the lights to work. Attachable light kits might be included inside the ceiling fan box at the time of sale or sold separately for subsequent attachment to the fan.

Residential Ceiling Fan: A non-portable device designed for home use that is suspended from the ceiling for circulating air via the rotation of fan blades. Some ceiling fans also have an integral or attachable light kit.

British Thermal Unit (Btu): A British standard unit of energy.

Combination Space-Heating and Water Heating Appliance: Appliance that provides both space conditioning (boiler) and hot water heating with one appliance or energy source. The combination appliance circulates hot water from the water heater through a heat exchanger in the air handler. A blower will move the heated air through a standard duct system. In the summer, an air conditioner is connected to the exchanger and the system functions similarly, with cool air being pushed through the ductwork.



**Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **4-6. Furnaces and Furnace/Hot Water Heaters (<340,000 Btu/h)**

<b>CSI Reference:</b> 23 54 00
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### **Covered Products:**

This specification shall cover furnaces and combination furnace/hot water heaters with an output of less than 340,000 Btu/h.

### **Definition:**

Furnace: A heating unit whose function is the combustion of fossil fuel for space heating with forced hot air. Unit must include burner(s), heat exchanger(s), blower(s) and connections to heating ducts. A heating unit that meets this definition and also provides hot water for domestic or other use may be considered a furnace.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



#### 4-7. Ground Source Heat Pumps (Geothermal)

<b>CSI Reference:</b>	<b>48 16 13</b>
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##### **Covered Products:**

This specification shall cover open loop, closed loop and direct expansion geothermal heat pumps. Geothermal heat pumps that include a water heating function in the refrigeration cycle (integrated demand water heating) are also covered.

##### **Definition:**

Closed Loop System: A ground heat exchanger in which the heat transfer fluid is permanently contained in a closed system.

Desuperheater: A partial heat recovery system that captures heat from the hot refrigerant as it leaves the heat pump compressor and transfers it to the domestic hot water. Desuperheaters provide hot water only while the heat pump is providing space conditioning.

Direct Expansion System: A geothermal heat pump system in which the refrigerant is circulated in pipes buried in the ground, rather than using a heat transfer fluid, such as water or antifreeze solution in a separate closed loop, and fluid to refrigerant heat exchanger.

Geothermal Heat Pump: A model which uses the thermal energy of the ground or groundwater as the heat source and heat sink for residential space heating and/or cooling. It may provide both space heating and cooling, cooling only or heating only functions. A geothermal heat pump model consists of one or more factory-made assemblies that normally include an indoor conditioning coil with air moving means, compressor(s) and refrigerant to fluid heat exchanger(s). In addition, for the purposes of this specification, some or all of the domestic water heating shall be provided through the use of a desuperheater, integrated demand water heater or a separately installed compressor that provides demand water heating. The geothermal heat pump includes all the equipment and connections from the point at which the ground heat exchanger enters the house, except for indoor equipment that was installed by someone not representing the manufacturer or manufacturer's representative, such as the ground heat exchanger installer.

Ground Heat Exchanger: The method by which heat is exchanged with the ground, groundwater or surface water. Geothermal heat pumps may use any form of ground heat exchanger, which may include horizontal or vertical closed loops, open loop vertical wells, or surface water. For the purposes of this specification, the ground heat exchanger comprises all the equipment (piping,



connections, grouting, etc.) that is installed outside the house, and up to the point it enters the house and any equipment or connections that the ground heat exchanger contractor installs inside the house.

Integrated Demand Water Heating: For purposes of this specification, this term is used to describe geothermal heat pumps that include a water heating function in the refrigeration cycle. Integrated demand water heating differs from desuperheater in that the integrated demand water heating model provides all or nearly all of the domestic hot water needs and provides hot water even when space conditioning is not required. This includes systems that employ the use of a separate water heating compressor unit or that use the same compressor for space conditioning and water heating. Also sometimes referred to as full-demand or demand water heating.

Open Loop System: A ground heat exchanger in which the heat transfer fluid is part of a larger environment. The most common open loop systems use ground water or surface water as the heat transfer medium.

## **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.





## **4-8. In-Line Ventilating Fan**

<b>CSI Reference:</b> 23 37 00
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### **Covered Products:**

This specification shall cover in-line residential ventilating fans (single and multi-port), both ducted and direct-discharge models. Ventilating fans with sensors and timers may qualify under this specification. Residential ventilating fans under this specification can also be used in small commercial applications (e.g., bathroom of a restaurant).

### **Definition:**

In-Line Ventilating Fan: A fan designed to be located within the building structure and requires ductwork on both intake and exhaust. Those in-line fans with only one intake are referred to as “single port” in-line fans, while those with multiple intake ports are referred to as “multi-port” in-line fans in this specification.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **4-9. Programmable Thermostats**

**CSI Reference:** 23 09 13

### **Covered Products:**

This specification shall cover programmable thermostats with at least two different programming periods (for weekday and weekend programming) and at least four possible temperature settings (i.e., wake, day, evening, and sleep settings).

### **Definition:**

Comfort Setpoint Temperature: The temperature setting in degrees Fahrenheit or degrees Celsius for the time period during which the building is expected to be occupied, e.g., the early morning and evening hours.

Energy-Saving Setpoint Temperature: The setpoint temperature for the energy-saving periods, usually specified for both the heating and cooling seasons.

1) Set-Back Temperature. The setpoint temperature for the energy-saving periods during the heating season, generally at night and during unoccupied hours. temperature than the comfort setpoint temperature.

2) Set-Up Temperature. The setpoint temperature for the energy-saving periods during the cooling season, generally at night and during unoccupied hours. temperature than the comfort setpoint temperature.

Programmable Thermostat: A device that enables the user to set one or more time periods each day when a comfort setpoint temperature is maintained and one or more time periods each day when an energy-saving setpoint temperature is maintained. This device enables the user to save energy because the heating and cooling equipment is not running needlessly at a comfort temperature setpoint 24 hours per day. A programmable thermostat may be capable of controlling one or more zones of a conditioned space.

Setpoint Temperature: The temperature setting in degrees Fahrenheit or degrees Celsius for any given time period.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **4-10. Range Hood and Bathroom /Utility Room Ventilating Fans**

<b>CSI Reference:</b> <b>23 34 00</b>
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### **Covered Products:**

This specification shall cover range hoods and bathroom and utility room residential ventilating fans, both ducted and direct-discharge models, with airflow that does not exceed 500 cfm. Ventilating fans with sensors and timers may qualify under this specification. Residential ventilating fans under this specification can also be used in small commercial applications (e.g., bathroom of a restaurant).

### **Definition:**

Residential Ventilating Fan: A ceiling, wall-mounted, or remotely mounted in-line fan designed to be used in a bathroom or utility room whose purpose is to move objectionable air from inside the building to the outdoors. Residential ventilating fans used for cooling (e.g., whole-house fans) or air circulation are excluded from this definition.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **4-11. Room Air Cleaners**

<b>CSI Reference:</b> <b>23 40 00</b>
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### **Covered Products:**

This specification shall cover room air cleaners.

### **Definition:**

Fan with Filter and Electrostatic Plates: Air cleaner which operates with a fan and filter(s) that incorporates electrically charged plates or wires to electrostatically collect particulate matter.

Ion Generator: Air cleaner that incorporates an ion generator only.

Ozone Generator: A device intended to reduce or eliminate microorganisms within a chamber by means of introducing ozone into the room environment.

Room Air Cleaner: An electric cord-connected, portable appliance with the primary function of removing particulate matter from the air and which can be moved from room to room, including any electrostatic filter, ion generator, ozone generator or other type of air cleaner.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **4-12. Room Air Conditioners**

<b>CSI Reference:</b> 23 80 00
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### **Covered Products:**

This specification shall cover room air conditioners.

### **Definition:**

Casement-only: A room air conditioner designed for mounting in a casement window with an encased assembly with a width of 14.8 inches or less and a height of 11.2 inches or less.

Casement-slider: A room air conditioner with an encased assembly designed for mounting in a sliding or casement window with a width of 15.5 inches or less.

Reverse Cycle: The heating function found in certain room air conditioner models.

Room Air Conditioner (RAC): A device that is used to control temperature and humidity in an enclosed space. This definition applies to window RACs, through-the-wall RACs, casement and casement slider RACs, and reverse cycle RACs (or heat pump RACs.) This definition does not apply to a packaged terminal air conditioner (PTAC).

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## Lighting Products

### 5-1. Ballasts, Fluorescent, Linear T12 Lamps

<b>CSI Reference:</b> <b>26 50 00</b>
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#### Covered Products:

This specification shall cover ballasts for linear T12 lamps of the lengths and wattages listed in the table below.

#### Definition:

Ballast Efficacy Factor (BEF): The ratio of the ballast factor (BF) to input watts; it measures the efficiency of the lamp/ballast system relative to others using the same type and number of lamps. Ballast factor (BF), also called relative light output (RLO), is the ratio of the light output of a lamp(s) operated by a ballast, to the light output of the same lamp(s) operated by a reference ballast at rated current and voltage.

Fluorescent Ballast: The fluorescent ballast is designed to provide the necessary burst of energy to start a fluorescent lamp and then limits the electricity flow to provide an even discharge of current to sustain an even generation of light.

#### Standard:

##### Ballasts, Fluorescent, Linear T12 Lamps:

Product Type: Ballast, Fluorescent, Four-Foot, T12, 34-Watts  
Number of Lamps: 1  
Required BEF: 2.64 or higher

Product Type: Ballast, Fluorescent, Four-Foot, T12, 34-Watts  
Number of Lamps: 2  
Required BEF: 1.41 or higher

Product Type: Ballast, Fluorescent, Four-Foot, T12, 34-Watts  
Number of Lamps: 3  
Required BEF: 0.93 or higher

Product Type: Ballast, Fluorescent, Eight-Foot, T12, 60-Watts  
Number of Lamps: 2  
Required BEF: 0.80 or higher



## **5-2. Ballasts, Fluorescent, Linear T8 Lamps**

<b>CSI Reference:</b> <b>26 50 00</b>
---------------------------------------

### **Covered Products:**

This specification shall cover ballasts for linear T8 lamps of the lengths and wattages listed in the table below.

### **Definition:**

Ballast Efficacy Factor (BEF): The ratio of the ballast factor (BF) to input watts; it measures the efficiency of the lamp/ballast system relative to others using the same type and number of lamps. Ballast factor (BF), also called relative light output (RLO), is the ratio of the light output of a lamp(s) operated by a ballast, to the light output of the same lamp(s) operated by a reference ballast at rated current and voltage.

Fluorescent Ballast: The fluorescent ballast is designed to provide the necessary burst of energy to start a fluorescent lamp and then limits the electricity flow to provide an even discharge of current to sustain an even generation of light.

### **Standard:**

#### Ballasts, Fluorescent, Linear T8 Lamps:

Product Type: Ballast, Fluorescent, Four-Foot, T8, 32-Watts  
Number of Lamps: 1  
Required BEF: 2.54 or higher

Product Type: Ballast, Fluorescent, Four-Foot, T8, 32-Watts  
Number of Lamps: 2  
Required BEF: 1.44 or higher

Product Type: Ballast, Fluorescent, Four-Foot, T8, 32-Watts  
Number of Lamps: 3  
Required BEF: 0.93 or higher

Product Type: Ballast, Fluorescent, Four-Foot, T8, 32-Watts  
Number of Lamps: 4  
Required BEF: 0.73 or higher

Product Type: Ballast, Fluorescent, Eight-Foot, T8, 59-Watts  
Number of Lamps: 2  
Required BEF: 0.80 or higher



## **5-3. Ballasts, Fluorescent, U-Bent T12 Lamps, 34-Watts**

<b>CSI Reference:</b> <b>26 50 00</b>
---------------------------------------

### **Covered Products:**

This specification shall cover ballasts for 34-watt, U-bent T12 lamps with 1-3 lamps.

### **Definition:**

Ballast Efficacy Factor (BEF): The ratio of the ballast factor (BF) to input watts; it measures the efficiency of the lamp/ballast system relative to others using the same type and number of lamps. Ballast factor (BF), also called relative light output (RLO), is the ratio of the light output of a lamp(s) operated by a ballast, to the light output of the same lamp(s) operated by a reference ballast at rated current and voltage.

Fluorescent Ballast: The fluorescent ballast is designed to provide the necessary burst of energy to start a fluorescent lamp and then limits the electricity flow to provide an even discharge of current to sustain an even generation of light.

Lamp: Any glass envelope with a gas, coating, or filament that produces visible light when electricity is applied, but such term shall not include automotive light bulbs.

### **Standard:**

#### Ballasts, Fluorescent, U-Bent T12 Lamps, 34-Watts:

Product Type: Ballast, Fluorescent, Four-Foot, T12, 34-Watts  
Number of Lamps: 1  
Required BEF: 2.64 or higher

Product Type: Ballast, Fluorescent, Four-Foot, T12, 34-Watts  
Number of Lamps: 2  
Required BEF: 1.41 or higher

Product Type: Ballast, Fluorescent, Four-Foot, T12, 34-Watts  
Number of Lamps: 3  
Required BEF: 0.93 or higher





## **5-4. Ballasts, Fluorescent, U-Bent T8 Lamps, 32-Watts**

<b>CSI Reference:</b> <b>26 50 00</b>
---------------------------------------

### **Covered Products:**

This specification shall cover ballasts for 32-watt, U-bent T8 lamps with 1-4 lamps.

### **Definition:**

Ballast Efficacy Factor (BEF): The ratio of the ballast factor (BF) to input watts; it measures the efficiency of the lamp/ballast system relative to others using the same type and number of lamps. Ballast factor (BF), also called relative light output (RLO), is the ratio of the light output of a lamp(s) operated by a ballast, to the light output of the same lamp(s) operated by a reference ballast at rated current and voltage.

Fluorescent Ballast: The fluorescent ballast is designed to provide the necessary burst of energy to start a fluorescent lamp and then limits the electricity flow to provide an even discharge of current to sustain an even generation of light.

Lamp: Any glass envelope with a gas, coating, or filament that produces visible light when electricity is applied, but such term shall not include automotive light bulbs.

### **Standard:**

#### Ballasts, Fluorescent, U-Bent T8 Lamps, 32-Watts:

Product Type: Ballast, Fluorescent, U-Tube, T8, 32-Watts  
Number of Lamps: 1  
Required BEF: 2.54 or higher

Product Type: Ballast, Fluorescent, U-Tube, T8, 32-Watts  
Number of Lamps: 2  
Required BEF: 1.44 or higher

Product Type: Ballast, Fluorescent, U-Tube, T8, 32-Watts  
Number of Lamps: 3  
Required BEF: 0.93 or higher

Product Type: Ballast, Fluorescent, U-Tube, T8, 32-Watts  
Number of Lamps: 4  
Required BEF: 0.73 or higher



## 5-5. Exit Signs

<b>CSI Reference:</b> 26 53 00
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### Covered Products:

This specification shall cover all signs that operate on 5 watts or less per sign.

### Definition:

**Exit Sign:** A sign that is permanently fixed in place and used to identify a means of egress. For the purposes of ENERGY STAR, an exit sign must have an illuminated, legally-required legend. Exit signs that are required by section 7.10.4 of the Life Safety Code to remain illuminated via an emergency power source upon failure of the normal power supply must be designed to comply with this requirement.

**Legally Required Legend:** The words "EXIT", "TO EXIT", "STAIR", "TO STAIR", "STAIRS", "TO STAIRS", "FIRE ESCAPE", "TO FIRE ESCAPE", "FIRE EXIT", and "TO FIRE EXIT". This definition will also encompass other combinations of letters and symbols if and when these signs may be listed in accordance with UL 924.

**Exit Sign Model:** For the purposes of ENERGY STAR, an exit sign model is an exit sign in the configuration that is actually packaged and sold to end users under a unique model number or name. For exit sign models with an individual rechargeable battery, the battery charger shall be included as part of the exit sign model and shall be tested and qualified as a single product.

**Input Power Demand:** The amount of active power required to continuously illuminate an exit sign model, measured in watts (W). For exit sign models with rechargeable batteries, input power demand shall be measured with batteries at full charge.

**Power Factor:** A measurement that determines how effectively power drawn by the equipment is converted into actual usable power by an electric component. Power Factor is the ratio between active (useful) power, measured in watts, and apparent power, measured in volt-amperes.

**Lagging Power Factor:** With an inductive load, the current lags the applied voltage in a clockwise direction represented on a vector diagram, and is said to be a lagging power factor.

**Leading Power Factor:** With a capacitive load, the current leads the applied voltage in a clockwise direction represented on a vector diagram, and is said to be a leading power factor.



NFPA 101, Life Safety Code: The National Fire Protection Association (United States) (NFPA) develops NFPA 101, Life Safety Code. The Code addresses those construction, protection, and occupancy features necessary to minimize danger to life from fire, including smoke, fumes, or panic. Many states and localities adopt this Life Safety Code into their own Building Code standards.

NRTL: Nationally Recognized Testing Laboratory Program, which is a part of OSHA's Directorate of Technical Support.

OSHA: Occupational Safety & Health Administration.

UL 924: The Standard for Safety for Emergency Lighting and Power Equipment, developed by Underwriters Laboratories.

## **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **5-6. Luminaires, Downlight, With Compact Fluorescent Lamps (13-32 Lamp Wattage)**

<b>CSI Reference:</b>	<b>26 50 00</b>
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### **Covered Products:**

This specification shall cover downlight luminaires for 13-32 watt compact fluorescent lamps.

### **Definition:**

Baffle: A light-absorbing element within the luminaire.

Downlight Luminaire: Luminaire is a complete lighting unit consisting of a fixture along with one or more ballasts and lamps. Downlight is a small, ceiling-mounted direct lighting unit that casts its light downward.

Lamp: Any glass envelope with a gas, coating, or filament that produces visible light when electricity is applied, but such term shall not include automotive light bulbs.

Luminaire Efficacy Rating (LER): Describes the efficiency of a luminaire in terms of rated light output (in lumens) per watt of electricity use. Lumen is a measure of light output.

NEMA: National Electrical Manufacturers Association

### **Standard:**

Luminaires, Downlight, With Compact Fluorescent Lamps (13-32 Lamp Wattage):

Luminaire Type (NEMA Designation): Open Optics  
Required LER: 29 or higher

Luminaire Type (NEMA Designation): Baffled Optics  
Required LER: 21 or higher

Luminaire Type (NEMA Designation): Lensed Optics  
Required LER: 24 or higher



## **5-7. Luminaires, Downlight, With Metal Halide Lamps (<150 Watts)**

<b>CSI Reference:</b> <b>26 50 00</b>
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### **Covered Products:**

This specification shall cover downlight luminaires for metal halide lamps under 150 watts.

### **Definition:**

Downlight Luminaire: Luminaire is a complete lighting unit consisting of a fixture along with one or more ballasts and lamps. Downlight is a small, ceiling-mounted direct lighting unit that casts its light downward.

Lamp: Any glass envelope with a gas, coating, or filament that produces visible light when electricity is applied, but such term shall not include automotive light bulbs.

Luminaire Efficacy Rating (LER): Describes the efficiency of a luminaire in terms of rated light output (in lumens) per watt of electricity use. Lumen is a measure of light output.

NEMA: National Electrical Manufacturers Association

### **Standard:**

Luminaires, Downlight, With Metal Halide Lamps (<150 Watts):

Luminaire Type (NEMA Designation): Open Optics  
Required LER: 35 or higher

Luminaire Type (NEMA Designation): Lensed Optics  
Required LER: 30 or higher



## 5-8. Luminaires, Fluorescent

**CSI Reference:** 26 50 00

### Covered Products:

This specification shall cover fluorescent luminaires, including 2' x 2' Recessed, For U-Tube Lamps, 2' x 4' For Recessed Lamps, Plastic Wraparound, Strip Lights and Industrial Luminaires.

### Definition:

Lamp: Any glass envelope with a gas, coating, or filament that produces visible light when electricity is applied, but such term shall not include automotive light bulbs.

Luminaire: A complete lighting unit consisting of a fixture along with one or more ballasts and lamps.

Luminaire Efficacy Rating (LER): Describes the efficiency of a luminaire in terms of rated light output (in lumens) per watt of electricity use. Lumen is a measure of light output.

NEMA: National Electrical Manufacturers Association

Video Display Terminal (VDT): Computer monitor.

VDT-Preferred: A type of luminaire that meet Illuminating Engineering Society of North America (IESNA) recommendations for glare reduction, based on maximum allowable average luminance at 55° and higher angles from vertical.

### Standard:

#### Luminaires, Fluorescent:

Luminaire Type (NEMA Designation): Lensed (FL)  
Number of Lamps: 2; Required LER: 62 or higher  
Number of Lamps: 3; Required LER: 61 or higher  
Number of Lamps: 4; Required LER: 61 or higher

Luminaire Type (NEMA Designation): VDT-Preferred Louvered (FP)  
Number of Lamps: 2; Required LER: 50 or higher  
Number of Lamps: 3; Required LER: 51 or higher  
Number of Lamps: 4; Required LER: 54 or higher

Luminaire Type (NEMA Designation): Four-Foot (FW)  
Number of Lamps: 2; Required LER: 63 or higher  
Number of Lamps: 4; Required LER: 62 or higher



Luminaire Type (NEMA Designation): Four-Foot (FS)  
Number of Lamps: 1; Required LER: 70 or higher  
Number of Lamps: 2; Required LER: 70 or higher

Luminaire Type (NEMA Designation): Four-Foot (FI)  
Number of Lamps: 1; Required LER: 67 or higher

Luminaire Type (NEMA Designation): Eight-Foot (FI)  
Number of Lamps: 2; Required LER: 68 or higher



## **5-9. Luminaires, Industrial HID, With High Pressure Sodium Lamps (<150 Lamp Wattage)**

<b>CSI Reference:</b>	<b>26 50 00</b>
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### **Covered Products:**

This specification shall cover industrial HID luminaires with high pressure sodium lamps less than 150 watts,

### **Definition:**

Lamp: Any glass envelope with a gas, coating, or filament that produces visible light when electricity is applied, but such term shall not include automotive light bulbs.

Luminaire: A complete lighting unit consisting of a fixture along with one or more ballasts and lamps.

Luminaire Efficacy Rating (LER): Describes the efficiency of a luminaire in terms of rated light output (in lumens) per watt of electricity use. Lumen is a measure of light output.

Upward Efficiency: The portion of light directed up. Both high-bay and low-bay luminaires are available with opaque reflectors, which direct all or most of the light downward, and with transparent refractors, which direct some light up.

### **Standard:**

Luminaires, Industrial HID, With High Pressure Sodium Lamps (<150 Lamp Wattage):

Upward Efficiency: 0%; Lamp Wattage: 150-399  
Closed Fixture (HC) LER Required: 58 or higher  
Open Fixture (HC) LER Required: 68 or higher

Upward Efficiency: 0%; Lamp Wattage: 400-999  
Closed Fixture (HC) LER Required: 63 or higher  
Open Fixture (HC) LER Required: 84 or higher

Upward Efficiency: 0%; Lamp Wattage: >1000  
Closed Fixture (HC) LER Required: N/A  
Open Fixture (HC) LER Required: N/A

Upward Efficiency: 1%-10%; Lamp Wattage: 150-399  
Closed Fixture (HC) LER Required: 64 or higher  
Open Fixture (HC) LER Required: 63 or higher





Upward Efficiency: 1%-10%; Lamp Wattage: 400-999  
Closed Fixture (HC) LER Required: 82 or higher  
Open Fixture (HC) LER Required: 89 or higher

Upward Efficiency: 1%-10%; Lamp Wattage: >1000  
Closed Fixture (HC) LER Required: N/A  
Open Fixture (HC) LER Required: 109 or higher

Upward Efficiency: 11%-20%; Lamp Wattage: 150-399  
Closed Fixture (HC) LER Required: N/A  
Open Fixture (HC) LER Required: 78 or higher

Upward Efficiency: 11%-20%; Lamp Wattage: 400-999  
Closed Fixture (HC) LER Required: N/A  
Open Fixture (HC) LER Required: 94 or higher

Upward Efficiency: 11%-20%; Lamp Wattage: >1000  
Closed Fixture (HC) LER Required: N/A  
Open Fixture (HC) LER Required: N/A

Upward Efficiency: >20%; Lamp Wattage: 150-399  
Closed Fixture (HC) LER Required: 75 or higher  
Open Fixture (HC) LER Required: 77 or higher

Upward Efficiency: >20%; Lamp Wattage: 400-999  
Closed Fixture (HC) LER Required: N/A  
Open Fixture (HC) LER Required: N/A

Upward Efficiency: >20%; Lamp Wattage: >1000  
Closed Fixture (HC) LER Required: N/A  
Open Fixture (HC) LER Required: N/A



## 5-10. Luminaires, Industrial HID, With Metal Halide Lamps (<150 Lamp Wattage)

<b>CSI Reference:</b>	<b>26 50 00</b>
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### Covered Products:

This specification shall cover Industrial HID luminaires with metal halide lamps that are less than 150 watts.

### Definition:

Lamp: Any glass envelope with a gas, coating, or filament that produces visible light when electricity is applied, but such term shall not include automotive light bulbs.

Luminaire: A complete lighting unit consisting of a fixture along with one or more ballasts and lamps.

Luminaire Efficacy Rating (LER): Describes the efficiency of a luminaire in terms of rated light output (in lumens) per watt of electricity use. Lumen is a measure of light output.

Upward Efficiency: The portion of light directed up. Both high-bay and low-bay luminaires are available with opaque reflectors, which direct all or most of the light downward, and with transparent refractors, which direct some light up.

### Standard:

#### Luminaires, Industrial HID, With Metal Halide Lamps (<150 Lamp Wattage):

Upward Efficiency: 0%; Lamp Wattage: 150-399  
Closed Fixture (HC) LER Required: 41 or higher  
Open Fixture (HC) LER Required:N/A

Upward Efficiency: 0%; Lamp Wattage: 400-999  
Closed Fixture (HC) LER Required: 53 or higher  
Open Fixture (HC) LER Required:59 or higher

Upward Efficiency: 0%; Lamp Wattage: >1000  
Closed Fixture (HC) LER Required: 77 or higher  
Open Fixture (HC) LER Required:N/A

Upward Efficiency: 1%-10%; Lamp Wattage: 150-399  
Closed Fixture (HC) LER Required: 56 or higher  
Open Fixture (HC) LER Required:N/A



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Upward Efficiency: 1%-10%; Lamp Wattage: 400-999  
Closed Fixture (HC) LER Required: 62 or higher  
Open Fixture (HC) LER Required: 64 or higher

Upward Efficiency: 1%-10%; Lamp Wattage: >1000  
Closed Fixture (HC) LER Required: N/A  
Open Fixture (HC) LER Required: 88 or higher

Upward Efficiency: >20%; Lamp Wattage: 150-399  
Closed Fixture (HC) LER Required: 62 or higher  
Open Fixture (HC) LER Required: 77 or higher

Upward Efficiency: >20%; Lamp Wattage: 400-999  
Closed Fixture (HC) LER Required: 65 or higher  
Open Fixture (HC) LER Required: N/A

Upward Efficiency: >20%; Lamp Wattage: >1000  
Closed Fixture (HC) LER Required: N/A  
Open Fixture (HC) LER Required: N/A



## 5-11. Luminaires, Residential

**CSI Reference:** 26 50 00

### Covered Products:

This specification shall cover indoor and outdoor light fixtures and recessed downlight retrofit kits intended primarily for residential type applications.

### Definition:

Ballast: A device used with an electric-discharge lamp to obtain the necessary circuit conditions (voltage, current, and waveform) for starting and operating.

Lamp: Any glass envelope with a gas, coating, or filament that produces visible light when electricity is applied, but such term shall not include automotive light bulbs.

Light Fixture (Luminaire): A complete lighting unit consisting of a lamp or lamps and ballasting (when applicable) together with the parts designed to distribute the light, position and protect the lamps, and connect the lamps to the power supply.

Luminaire: A complete lighting unit consisting of a fixture along with one or more ballasts and lamps.

Optics: Include reflectors, baffles, lenses and/or diffusers, all which control the light distribution and the appearance of the lighted fixture.

Recessed Downlight Retrofit Kit: A non-linear lighting unit consisting of lamp(s), ballasting, optics, trim, and power supply connection designed to convert an incandescent or halogen type Insulated Ceiling (IC) or non-IC recessed downlight into an air-tight fixture that uses an energy-efficient light source.

Residential Applications: Include single-family and multi-family dwellings (such as houses and apartments), dormitories, public or military housing, assisted-living facilities, motels and hotels, and some light commercial applications.

Trim: The part of the downlight that covers the ragged edge of the ceiling cut-out. The trim may be a separate ring, or trim ring, or it may be integrated with the optics (i.e., a self-flanged reflector). Airtight or non-airtight.

### Standard:

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## Miscellaneous Products - Construction

### 6-1. Carpet Adhesives

<b>CSI Reference:</b> <b>09 68 00</b>
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#### Covered Products:

This specification shall cover carpet adhesives.

#### Definition:

Carpet Adhesive: Any substance used to adhere carpet to a floor by surface attachment, including any latex multi-purpose floor adhesive, pressure-sensitive floor adhesive, vinyl-backed floor adhesive, latex seam adhesive, vinyl-backed seam sealer, cove base adhesive, tackless cushion adhesive and contact adhesive.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

#### Standard:

Carpet Adhesives: This product may not contain any volatile organic compound in any concentration exceeding that specified below:

Volatile Organic Compound: Formaldehyde  
24-Hour Testing Maximum Emission Factor ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 50  
14-Day Testing Maximum Emission Factor ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 31

Volatile Organic Compound: 2-ethyl-1-hexanol  
24-Hour Testing Maximum Emission Factor ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 300  
14-Day Testing Maximum Emission Factor ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 300

Volatile Organic Compound: Total Volatile Organic Compounds  
24-Hour Testing Maximum Emission Factor ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 8000  
14-Day Testing Maximum Emission Factor ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): N/A

The maximum content of VOCs shall be determined according to the American Society for Testing and Materials test method D 5116 (Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products).



Products that are compliant with the Green Label Plus program of the Carpet and Rug Institute are also compliant with this standard.



## **6-2. Carpet Cushions**

<b>CSI Reference:</b> <b>09 68 00</b>
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### **Covered Products:**

This specification shall cover carpet cushions.

### **Definition:**

Carpet cushion: Any kind of material placed under carpet to provide softness when it is walked upon.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

Carpet Cushions: This product may not contain any volatile organic compound in any concentration exceeding that specified below:

Volatile Organic Compound: Butylated Hydroxytoluene  
24-Hour Testing Maximum Emission Factor (EF) ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 300

Volatile Organic Compound: Formaldehyde  
24-Hour Testing Maximum Emission Factor (EF) ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 50

Volatile Organic Compound: 4-Phenylcyclohexene (4PCH)  
24-Hour Testing Maximum Emission Factor (EF) ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 50

Volatile Organic Compound: Total Volatile Organic Compounds  
24-Hour Testing Maximum Emission Factor (EF) ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 1000

The maximum content of VOCs shall be determined according to the American Society for Testing and Materials test method D 5116 (Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products).

Products that are compliant with the Green Label Plus program of the Carpet and Rug Institute are also compliant with this standard.



## **6-3. Carpet Cushion – Bonded Polyurethane**

<b>CSI Reference:</b> <b>09 68 00</b>
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### **Covered Products:**

This specification shall cover bonded polyurethane carpet cushions.

### **Definition:**

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

Carpet Cushion- Bonded Polyurethane:

Material: Old Carpet Cushion

Recovered Post-consumer Content (%): 15-50

Total Recovered Materials Content (%): 15-50





## **6-4. Carpet Cushion – Jute**

<b>CSI Reference:</b> <b>09 68 00</b>
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### **Covered Products:**

This specification shall cover jute carpet cushions.

### **Definition:**

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

#### Carpet Cushion – Jute:

Material: Burlap  
Recovered Post-consumer Content (%): 40  
Total Recovered Materials Content (%):40



## **6-5. Carpet Cushion – Rubber**

**CSI Reference:** 09 68 00

### **Covered Products:**

This specification shall cover rubber carpet cushions.

### **Definition:**

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

Carpet Cushion – Rubber:

Material: Tire Rubber

Recovered Post-consumer Content (%): 60-90

Total Recovered Materials Content (%):60-90



## **6-6. Carpet Cushion – Synthetic Fibers**

<b>CSI Reference:</b> <b>09 68 00</b>
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### **Covered Products:**

This specification shall cover synthetic fiber carpet cushions.

### **Definition:**

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

Carpet Cushion – Synthetic Fibers:

Material: Carpet Fabrication Scrap

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%):100



## **6-7. Carpets**

<b>CSI Reference:</b>	<b>09 68 00</b>
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### **Covered Products:**

This specification shall cover carpets.

### **Definition:**

Carpet: Any fabric used as a floor covering, but such term shall not include artificial turf.

Volatile Organic Compound (VOC): Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions, as specified in part 51.00 of chapter 40 of the United States code of federal regulations.

### **Standard:**

#### Carpets:

This product may not contain any volatile organic compound in any concentration exceeding that specified below:

Volatile Organic Compound: Formaldehyde  
24-Hour Testing Maximum Emission Factor ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 50  
14-Day Testing Maximum Emission Factor ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 30

Volatile Organic Compound: 4-Phenylcyclohexene  
24-Hour Testing Maximum Emission Factor ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 50  
14-Day Testing Maximum Emission Factor ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 17

Volatile Organic Compound: Styrene  
24-Hour Testing Maximum Emission Factor ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 410  
14-Day Testing Maximum Emission Factor ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 410

Volatile Organic Compound: Total Volatile Organic Compounds  
24-Hour Testing Maximum Emission Factor ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): 500  
14-Day Testing Maximum Emission Factor ( $\mu\text{g}/\text{m}^2\cdot\text{hr}$ ): N/A

The maximum content of VOCs shall be determined according to the American Society for Testing and Materials test method D 5116 (Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products).



Products that are compliant with the Green Label Plus program of the Carpet and Rug Institute are also compliant with this VOC standard.



## 6-8. Cement and Concrete

CSI Reference: 03 05 00

### Covered Products:

This specification shall cover cement and concrete.

### Definition:

Cenospheres: Additives similar to coal fly ash and ground granulated blast furnace (GGBF) slag. Cenospheres occur naturally in fly ash, the largest byproduct of coal-fired power plants. They are microscopic spheres made of silica and alumina and are filled with air or other gases.

Coal fly ash: A byproduct of coal burning at electric utility plants. It is called “fly” ash because it is transported from the combustion chamber by exhaust gases.

GGBF slag: A byproduct of iron blast furnaces. The slag is ground into granules finer than portland cement and can be used as an ingredient in concrete.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

Silica fume: A waste material recovered from alloyed metal production. It is the solid waste collected on filters of electric arc furnace stacks. A grain of sand is about 1,000 times larger than a silica fume particle.

### Standard:

#### Cement and Concrete:

Material: Cenospheres

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): Minimum 10% (by volume)

Material: Coal fly Ash

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): No Range Recommended



Material: GGBF Slag

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): No Range Recommended

Material: Silica Fume

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): 5-10% of cementitious material (dry weight basis)



## **6-9. Channelizers**

<b>CSI Reference:</b> 34 71 00
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### **Covered Products:**

This specification shall cover channelizers.

### **Definition:**

Channelizers: Barrels or drums that direct traffic around areas of road repair and construction.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

Channelizers:

Material: Plastic

Recovered Post-consumer Content (%): 25-90

Total Recovered Materials Content (%): No Range Recommended

Material: Rubber (base only)

Recovered Post-consumer Content (%): 100

Total Recovered Materials Content (%): No Range Recommended





## **6-10. Delineators - Fixed**

<b>CSI Reference:</b> <b>34 71 19</b>
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### **Covered Products:**

This specification shall cover fixed delineators with surface mount or rubber bases.

### **Definition:**

Delineators: Temporary pavement markers that come in many shapes, sizes, and compositions.

Basic Oxygen Furnace (BOF): Steel from the BOF process contains 25-30% total recovered materials, of which 16% is post-consumer steel.

Electric Arc Furnace (EAF): Steel from the EAF process contains a total of 100% recovered steel, of which 67% is post-consumer.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

#### Delineators - Fixed:

Material: Plastic

Recovered Post-consumer Content (%): 25-90

Total Recovered Materials Content (%): No Range Recommended

Material: Rubber (base only)

Recovered Post-consumer Content (%): 100

Total Recovered Materials Content (%): No Range Recommended

Material: Steel (BOF, base only)

Recovered Post-consumer Content (%): 16

Total Recovered Materials Content (%): 25-30

Material: Steel (EAF, base only)

Recovered Post-consumer Content (%): 67

Total Recovered Materials Content (%): 100



## **6-11. Delineators - Flexible**

<b>CSI Reference:</b> 34 71 19
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### **Covered Products:**

This specification shall cover flexible delineators.

### **Definition:**

Flexible Delineators: Stakes driven into the ground flexible enough so that vehicles can strike them without causing damage to the vehicle or the delineator.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

Delineators - Flexible:

Material: Plastic PET

Recovered Post-consumer Content (%): 25-85

Total Recovered Materials Content (%): No Range Recommended



## 6-12. Electric Motors

**CSI Reference:** 48 00 00

### Covered Products:

This specification shall cover induction motors rated 600 volts or less (random wound) or induction motors rated medium voltage of 5 kV or less (form wound).

### Definition:

Electric Motors: a motor that converts electricity to mechanical work.

Open drip proof motor: has interior components that are cooled by a fan moving cool air through intake and exhaust vents.

Totally enclosed fan cooled motor: has an externally-mounted fan that blows air across the motor casing.

### Standard:

Electric Motors:

Nominal Efficiencies for Induction Motors Rated 600 Volts or Less (Random Wound)						
Motor Size (HP)	Open Drip-Proof (ODP)			Totally Enclosed Fan-Cooled (TEFC)		
	6-pole (1200 rpm)	4-pole (1800 rpm)	2-pole (3600 rpm)	6-pole (1200 rpm)	4-pole (1800 rpm)	2-pole (3600 rpm)
1	82.5	85.5	77.0	82.5	85.5	77.0
1.5	86.5	86.5	84.0	87.5	86.5	84.0
2	87.5	86.5	85.5	88.5	86.5	85.5
3	88.5	89.5	85.5	89.5	89.5	86.5
5	89.5	89.5	86.5	89.5	89.5	88.5
7.5	90.2	91.0	88.5	91.0	91.7	89.5
10	91.7	91.7	89.5	91.0	91.7	90.2
15	91.7	93.0	90.2	91.7	92.4	91.0
20	92.4	93.0	91.0	91.7	93.0	91.0
25	93.0	93.6	91.7	93.0	93.6	91.7



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<b>Nominal Efficiencies for Induction Motors Rated 600 Volts or Less (Random Wound)</b>						
<b>Motor Size (HP)</b>	<b>Open Drip-Proof (ODP)</b>			<b>Totally Enclosed Fan-Cooled (TEFC)</b>		
	<b>6-pole (1200 rpm)</b>	<b>4-pole (1800 rpm)</b>	<b>2-pole (3600 rpm)</b>	<b>6-pole (1200 rpm)</b>	<b>4-pole (1800 rpm)</b>	<b>2-pole (3600 rpm)</b>
30	93.6	94.1	91.7	93.0	93.6	91.7
40	94.1	94.1	92.4	94.1	94.1	92.4
50	94.1	94.5	93.0	94.1	94.5	93.0
60	94.5	95.0	93.6	94.5	95.0	93.6
75	94.5	95.0	93.6	94.5	95.4	93.6
100	95.0	95.4	93.6	95.0	95.4	94.1
125	95.0	95.4	94.1	95.0	95.4	95.0
150	95.4	95.8	94.1	95.8	95.8	95.0
200	95.4	95.8	95.0	95.8	96.2	95.4
250	95.4	95.8	95.0	95.8	96.2	95.8
300	95.4	95.8	95.4	95.8	96.2	95.8
350	95.4	95.8	95.4	95.8	96.2	95.8
400	95.8	95.8	95.8	95.8	96.2	95.8
450	96.2	96.2	95.8	95.8	96.2	95.8
500	96.2	96.2	95.8	95.8	96.2	95.8
<b>Nominal Efficiencies for Induction Motors Rated Medium Voltage - 5 kV or less (Form Wound)</b>						
<b>Motor Size (HP)</b>	<b>Open Drip-Proof (ODP)</b>			<b>Totally Enclosed Fan-Cooled (TEFC)</b>		
	<b>6-pole (1200 rpm)</b>	<b>4-pole (1800 rpm)</b>	<b>2-pole (3600 rpm)</b>	<b>6-pole (1200 rpm)</b>	<b>4-pole (1800 rpm)</b>	<b>2-pole (3600 rpm)</b>
250 - 500	95.0	95.0	94.5	95.0	95.0	95.0



## **6-13. Entry or Patio Doors, Residential**

<b>CSI Reference:</b> <b>08 10 00</b>
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### **Covered Products:**

This specification shall cover residential entry or patio doors.

### **Definition:**

Door: A residential entry or patio door system including door leaf, frame, and lites, where applicable.

Entry door: An exterior door other than glass doors.

Patio door: A hinged or sliding glass door.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **6-14. Floor Tiles**

<b>CSI Reference:</b> 09 65 00 09 30 26
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### **Covered Products:**

This specification shall cover floor tiles (heavy duty, commercial use).

### **Definition:**

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

#### Floor Tiles:

Material: Rubber

Recovered Post-consumer Content (%): 90-100

Total Recovered Materials Content (%): No Range Recommended

Material: Plastic

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): 90-100



## **6-15. Insulation - Cellulose**

**CSI Reference:** 07 20 00

### **Covered Products:**

This specification shall cover cellulose insulation (loose fill and spray on).

### **Definition:**

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

#### Insulation - Cellulose:

Material: Post-consumer Paper  
Recovered Post-consumer Content (%): 75  
Total Recovered Materials Content (%): 75



## **6-16. Insulation - Foam-In-Place**

<b>CSI Reference:</b> 07 21 19
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### **Covered Products:**

This specification shall cover foam-in-place insulation.

### **Definition:**

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

Insulation - Foam-In-Place:

Material: Recovered Material

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): 5





## **6-17. Insulation - Glass Fiber Reinforced**

**CSI Reference:** 07 21 13

### **Covered Products:**

This specification shall cover glass fiber reinforced insulation.

### **Definition:**

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

Insulation - Glass Fiber Reinforced:

Material: Recovered Material

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): 6



## **6-18. Insulation - Laminated Paperboard**

<b>CSI Reference:</b> <b>06 16 00</b>
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### **Covered Products:**

This specification shall cover laminated paperboard used for insulation.

### **Definition:**

Laminated paperboard: Boards made from one or more plies of kraft paper bonded together and used for decorative, structural, or insulating purpose.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

Insulation - Laminated Paperboard:

Material: Post-consumer Paper  
Recovered Post-consumer Content (%): 100  
Total Recovered Materials Content (%): 100



## **6-19. Insulation - Perlite Composition Board**

<b>CSI Reference:</b> 07 20 00
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### **Covered Products:**

This specification shall cover perlite composition board insulation.

### **Definition:**

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

Insulation - Perlite Composition Board:

Material: Post-consumer Paper  
Recovered Post-consumer Content (%): 23  
Total Recovered Materials Content (%): 23



## **6-20. Insulation - Phenolic Rigid Foam**

**CSI Reference:** 07 21 13

### **Covered Products:**

This specification shall cover phenolic rigid foam insulation.

### **Definition:**

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

Insulation - Phenolic Rigid Foam:

Material: Recovered Material

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): 5



## **6-21. Insulation - Plastic, Non-woven Batt**

**CSI Reference:** 07 21 16

### **Covered Products:**

This specification shall cover plastic, non-woven batt insulation.

### **Definition:**

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

Insulation - Plastic, Non-woven Batt:

Material: Recovered and/or Post-consumer Plastic

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): 100



## 6-22. Insulation - Plastic Rigid Foam, Polyisocyanurate/Polyurethane: Rigid Foam

<b>CSI Reference:</b> 07 21 13
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### Covered Products:

This specification shall cover plastic rigid foam, polyisocyanurate/polyurethane: rigid foam insulation.

### Definition:

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### Standard:

Insulation - Plastic Rigid Foam, Polyisocyanurate/Polyurethane: Rigid Foam:

Material: Recovered Material

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): 9



## **6-23. Insulation - Structural Fiberboard**

<b>CSI Reference:</b> <b>07 44 33</b>
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### **Covered Products:**

This specification shall cover structural fiberboard used for insulation.

### **Definition:**

Structural fiberboard: Panel made from wood, cane, or paper fibers matted together and used for sheathing, structural, and insulating purposes.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### **Standard:**

Insulation - Structural Fiberboard:

Material: Recovered Material

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): 80-100



## 6-24. Modular Threshold Ramps

CSI Reference:08 71 00 09 65 13

### Covered Products:

This specification shall cover modular threshold ramps.

### Definition:

Modular Threshold Ramps: Devices used to modify door thresholds and other small rises, particularly to improve access for people with disabilities.

Basic Oxygen Furnace (BOF): Steel from the BOF process contains 25-30% total recovered materials, of which 16% is post-consumer steel.

Electric Arc Furnace (EAF): Steel from the EAF process contains a total of 100% recovered steel, of which 67% is post-consumer.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### Standard:

#### Modular Threshold Ramps:

Material: Steel (BOF)

Recovered Post-consumer Content (%): 16

Total Recovered Materials Content (%): 25-30

Material: Steel (EAF)

Recovered Post-consumer Content (%): 67

Total Recovered Materials Content (%): 100

Material: Aluminum

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): 10

Material: Rubber

Recovered Post-consumer Content (%): 100

Total Recovered Materials Content (%): 100





## 6-25. Nonpressure Pipe

<b>CSI Reference:</b> 33 41 00	<b>27 05 28</b>
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### Covered Products:

This specification shall cover non-pressure pipes.

### Definition:

Nonpressure Pipe: Pipe used for drainage and as a conduit in construction, communications, municipal, industrial, agricultural, and mining applications.

Basic Oxygen Furnace (BOF): Steel from the BOF process contains 25-30% total recovered materials, of which 16% is post-consumer steel.

Electric Arc Furnace (EAF): Steel from the EAF process contains a total of 100% recovered steel, of which 67% is post-consumer.

Nonpressure pipe: Pipe used for drainage and as a conduit in construction, communications, municipal, industrial, agricultural, and mining applications.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### Standard:

#### Nonpressure Pipe:

Material: Steel (BOF)  
Recovered Post-consumer Content (%): 16  
Total Recovered Materials Content (%): 25-30

Material: Steel (EAF)  
Recovered Post-consumer Content (%): 67  
Total Recovered Materials Content (%): 100

Material: Plastic (HDPE)  
Recovered Post-consumer Content (%): 100  
Total Recovered Materials Content (%): 100



Material: Plastic (PVC)

Recovered Post-consumer Content (%): 5-15

Total Recovered Materials Content (%): 25-100

Material: Cement

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): No Range Recommended



## 6-26. Playground Equipment

**CSI Reference:** 11 68 13

### Covered Products:

This specification shall cover playground equipment such as swings, swing sets, play structures, modular play structures, slides, bridges, platforms, canopies or roofs, crawl tunnels, and any hardware for these components.

### Definition:

Basic Oxygen Furnace (BOF): Steel from the BOF process contains 25-30% total recovered materials, of which 16% is post-consumer steel.

Electric Arc Furnace (EAF): Steel from the EAF process contains a total of 100% recovered steel, of which 67% is post-consumer.

Plastic: Includes both single and mixed plastic resins.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### Standard:

#### Playground Equipment:

Material: Plastic

Recovered Post-consumer Content (%): 90-100

Total Recovered Materials Content (%): 100

Material: Plastic Composite

Recovered Post-consumer Content (%): 50-75

Total Recovered Materials Content (%): 95-100

Material: Steel (BOF)

Recovered Post-consumer Content (%): 16

Total Recovered Materials Content (%): 95



Material: Steel (EAF)

Recovered Post-consumer Content (%): 50-100

Total Recovered Materials Content (%): 95-100



## **6-27. Residential Skylights**

<b>CSI Reference:</b> <b>08 60 00</b>
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### **Covered Products:**

This specification shall cover residential skylights.

### **Definition:**

Skylight: An entire glazed unit designed for a sloped or horizontal application in the roof of a residential building to allow for natural daylighting. May be fixed or operable.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## **6-28. Residential Windows & Tubular Daylighting Devices**

<b>CSI Reference:</b> <b>08 50 00</b>
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### **Covered Products:**

This specification shall cover residential exterior windows and tubular daylighting devices.

### **Definition:**

Tubular Daylighting Device (Tubular Skylight): A device consisting of a glazed entrance aperture, a reflective cylindrical light pipe, and a glazed exit aperture installed in the roof of a residential building to allow for natural daylighting.

Window: An entire glazed unit designed for a vertical installation in an external wall of a residential building to allow for views and natural daylighting. May be fixed or operable.

### **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



## 6-29. Restroom Dividers/Partitions, Steel

<b>CSI Reference:</b> 10 21 13
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### Covered Products:

This specification shall cover steel restroom dividers/partitions.

### Definition:

Basic Oxygen Furnace (BOF): Steel from the BOF process contains 25-30% total recovered materials, of which 16% is post-consumer steel.

Electric Arc Furnace (EAF): Steel from the EAF process contains a total of 100% recovered steel, of which 67% is post-consumer.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

Restroom Divider/Partition: A barrier used to provide privacy in public restroom facilities.

### Standard:

#### Restroom Dividers/Partitions, Steel:

Material: Steel (from BOF)  
Recovered Post-consumer Content (%): 16  
Total Recovered Materials Content (%): 25-30

Material: Steel (from EAF)  
Recovered Post-consumer Content (%): 67  
Total Recovered Materials Content (%): 100



## 6-30. Roof Products

CSI Reference: 08 00 00

### Covered Products:

This specification shall cover all low-slope or steep slope roof products, such as roof coatings and single-ply membranes.

### Definition:

Built-Up-Roof (BUR): Traditional hot asphalt or coal tar built-up roofing membrane assembly consists of alternating layers of felts, fabrics, or mats saturated with bitumen during manufacture, assembled in place, and adhered with applied layers of hot bitumen. Surfacing for the hot BUR can be aggregate embedded in hot asphalt; mineral-surface cap sheets; modified bitumen cap sheets; or smooth-surface applications or coatings.

Composite Shingle: Composed of a base material, either organic felt or glass fiber mat; asphalt; and surfacing material, generally in the form of mineral granules.

Low-Slope Roofs: Surfaces with a slope of 2:12 inches or less.

Low-Slope Roof Products: Products that are typically installed on low-slope surfaces such as single-ply membranes, built-up-roofs (BUR), modified bitumen, spray polyurethane foam, roof coatings, and standing-seam profiled metal. Some products that are typically installed on low slope roofs may also be installed on steep-slope roofs (e.g., single-ply membranes and roof coatings). For the purposes of this definition, the roof product will constitute the uppermost surface of the building structure.

Metal Roof Component: Metal roof product designed to resemble a traditional steep-slope residential product such as shingle, tile, shake, or slate.

Metal Roof Panel: Metal roofing systems are divided into two categories, architectural and structural. Architectural metal roofs usually require a slope of at least 3:12. Structural metal roofs can be used on roofs with slopes as low as 1/4:12. Steel and aluminum sheets are commonly used to fabricate metal roof panels. Steel requires a corrosion resistant metal coating such as zinc, aluminum, alloys of zinc-aluminum, or tin. Metallic coated steel includes galvanized steel, aluminized steel, zinc-aluminum-coated steel and terne-coated steel. Metallic coated steels are also painted to provide additional corrosion protection, as well as color.

Modified Bitumen: Roll roofing products consisting of asphalt, reinforcing layers, and in some cases, surfacing. During manufacture, a polymer (APP, or atactic





polypropylene, and SBS, or styrene butadiene styrene, are the most common) is added to the bitumen while heating, which "modifies," or changes, its properties.

Roof Coating: A material typically applied in the liquid state to the roof surface at the time of construction or at a later time as a retrofit measure. Roof coatings may be bituminous, polymeric, or polymer modified. Bituminous roof coatings are formulated using bitumen. Polymeric roof coatings are formulated using a variety of synthetic resins such as acrylic, neoprene, styrene butadiene, urethane, polyvinyl acetate, and others. Polymer modified roof coatings are manufactured by combining a portion of the polymeric technology with bitumen technology.

Roof Surface: The uppermost part of the roof system that is in direct contact with solar radiation.

Roof Tile: May be composed of clay, concrete, fiber-cement, or synthetic materials. A variety of tile profiles, styles, finishes, and colors are available.

Single-Ply Membrane: Flexible manufactured sheet of compounded synthetic materials. Single-ply membranes include EPDM (ethylene, propylene, diene monomer), Neoprene (chloroprene rubber), PVC (polyvinyl chloride polymers), CSPE (chlorosulfonated polyethylene, also known as Hypalon), CPE (chlorinated polyethylene), PIB (polyisobutylene), NBP (nitrite alloy membranes compounded from butadiene-acrylonitrile copolymers), TPO (thermoplastic polyolefin), and others.

Spray Polyurethane Foam Roof System: A fully adhered system that consists of a rigid closed-cell sprayed-in-place polyurethane foam insulation and a protective roof coating. Typical coatings include acrylic, silicon, or urethane elastomers.

Steep-Slope Roofs: Surfaces with a slope greater than 2:12 inches.

Steep-Slope Roof Products: Products that are typically installed on steep-slope surfaces such as composite shingles, clay, concrete, or fiber-cement tile, slate, shakes, architectural profiled metal and individual metal roof components. Some products that are typically installed on low-slope roofs may also be installed on steep-slope roofs (e.g., single-ply membranes and roof coatings). For the purposes of this definition, the roof product will constitute the upper most surface of the building structure.

## **Standard:**

Energy Star: All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.



### 6-31. Roofing Materials

<b>CSI Reference:</b> 07 41 00 07 51 00 07 54 00
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#### Covered Products:

This specification shall cover roofing materials.

#### Definition:

Basic Oxygen Furnace (BOF): Steel from the BOF process contains 25-30% total recovered materials, of which 16% is post-consumer steel.

Electric Arc Furnace (EAF): Steel from the EAF process contains a total of 100% recovered steel, of which 67% is post-consumer.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

#### Standard:

##### Roofing Materials:

Material: Steel (BOF)  
Recovered Post-consumer Content (%): 16  
Total Recovered Materials Content (%): 25-30

Material: Steel (EAF)  
Recovered Post-consumer Content (%): 67  
Total Recovered Materials Content (%): 100

Material: Aluminum  
Recovered Post-consumer Content (%): 20-95  
Total Recovered Materials Content (%): 20-95

Material: Fiber (felt) or Fiber Composite  
Recovered Post-consumer Content (%): 50-100  
Total Recovered Materials Content (%): 50-100



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Material: Rubber

Recovered Post-consumer Content (%): 12-100

Total Recovered Materials Content (%): 100

Material: Plastic or Plastic/Rubber Composite

Recovered Post-consumer Content (%): 100

Total Recovered Materials Content (%): 100

Material: Wood/Plastic Composite

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): 100

Material: Cement

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): No Range Recommended



## 6-32. Shower Dividers/Partitions, Steel

<b>CSI Reference:</b> 10 21 16
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### Covered Products:

This specification shall cover steel shower dividers/partitions.

### Definition:

Basic Oxygen Furnace (BOF): Steel from the BOF process contains 25-30% total recovered materials, of which 16% is post-consumer steel.

Electric Arc Furnace (EAF): Steel from the EAF process contains a total of 100% recovered steel, of which 67% is post-consumer.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

Shower Divider/Partition: A barrier used to provide privacy in public restroom facilities.

### Standard:

#### Shower Dividers/Partitions, Steel:

Material: Steel (from BOF)  
Recovered Post-consumer Content (%): 16  
Total Recovered Materials Content (%): 25-30

Material: Steel (from EAF)  
Recovered Post-consumer Content (%): 67  
Total Recovered Materials Content (%): 100



## 6-33. Traffic Barricades

**CSI Reference:** 01 56 23  
34 71 13

### Covered Products:

This specification shall cover traffic barricades of all kinds including 'A' frame types, 'I' beam types, as well as free standing vertical and folding breakaway types.

### Definition:

Traffic Barricades: Used to redirect or restrict traffic in areas of highway construction or repair.

Basic Oxygen Furnace (BOF): Steel from the BOF process contains 25-30% total recovered materials, of which 16% is post-consumer steel.

Electric Arc Furnace (EAF): Steel from the EAF process contains a total of 100% recovered steel, of which 67% is post-consumer.

Postconsumer Recovered Material: A material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials.

Recovered Material: Waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

### Standard:

#### Traffic Barricades:

Material: Plastic (High Density Polyethylene [HDPE], Low-Density Polyethylene [LDPE], Polyethylene terephthalate [PET])

Recovered Post-consumer Content (%): 80-100

Total Recovered Materials Content (%): 100

Material: Steel (BOF)

Recovered Post-consumer Content (%): 16

Total Recovered Materials Content (%): 25-30

Material: Steel (EAF)

Recovered Post-consumer Content (%): 67

Total Recovered Materials Content (%): 100



Material: Fiberglass

Recovered Post-consumer Content (%): No Range Recommended

Total Recovered Materials Content (%): No Range Recommended



## Plumbing Fixtures

### 7-1. Lavatory Faucets

<b>CSI Reference:</b> 22 41 00
--------------------------------

#### Covered Products:

This specification shall cover lavatory faucets.

#### Definition:

Lavatory Faucet: A device which controls the flow of liquid from a pipe or the like by opening or closing an orifice.

#### Standard:

Lavatory Faucets:

Product: Faucet

Water Efficiency Requirement: < 2.0 gallons per minute



**7-2. Showerheads, Residential and Commercial**

<b>CSI Reference:</b> <b>22 40 00</b>
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**Covered Products:**

This specification shall cover showerheads.

**Definition:**

Showerhead: A perforated nozzle that showers water. This definition includes hand-held showerheads.

**Standard:**

Showerheads, Residential and Commercial:

Product: Showerhead

Water Efficiency Requirement: < 2.2 gallons per minute





## **7-3. Toilets, Residential and Commercial**

<b>CSI Reference:</b> <b>22 40 00</b>
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### **Covered Products:**

This specification shall cover residential and commercial toilets.

### **Definition:**

Toilet: A bathroom fixture consisting of a bowl, usually with a detachable, hinged seat and lid, and a device for flushing with water. There are three common varieties of toilets: gravity flow, (siphon-jet) flush valve, and pressurized tank systems.

### **Standard:**

Toilets, Residential and Commercial:

Product: Toilet

Water Efficiency Requirement: < 1.6 gallons per flush



## **7-4. Urinals, Residential and Commercial**

<b>CSI Reference:</b> <b>22 40 00</b>
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### **Covered Products:**

This specification shall cover residential and commercial urinals.

### **Definition:**

Urinal: A plumbing fixture which receives only liquid body waste and, on demand, conveys the waste through a trap seal into a gravity drainage system, except such term does not include fixtures designed for installations in prisons.

### **Standard:**

Urinals, Residential and Commercial:

Product: Urinal

Water Efficiency Requirement: < 1.0 gallons per flush



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